U.S. Department of the Interior
Bureau of Land Management

Final Environmental Assessment
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Swasey Herd Management Area
Wild Horse Gather Plan

U.S. Department of the Interior
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BLM

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1.0 Purpose of and Need for the Proposed Action

1.1 Introduction

The Bureau of Land Management (BLM) is proposing to gather about 262 and remove approximately 164 excess wild horses from within and outside the Swasey Herd Management Area (HMA) beginning in about October 2012. Up to 100 of the captured wild horses from the Swasey HMA would be released; about 49 would be mares treated with fertility control.

This Environmental Assessment (EA) is a site-specific analysis of the potential impacts that could result with the implementation of the Proposed Action or alternatives to the Proposed Action. Preparation of an EA assists the BLM authorized officer to determine whether to prepare an Environmental Impact Statement (EIS) if significant impacts could result, or a Finding of No Significant Impact (FONSI) if no significant impacts are expected.

This document is tiered to:

- ❒ House Range Resource Area Final Environmental Impact Statement and Proposed Resource Management Plan (EIS/RMP), 1986.

Should a determination be made that the implementation of the proposed or alternative actions would not result in "significant environmental impacts" or "significant environmental impacts beyond those already addressed in the RMP/EIS's" a FONSI will be prepared to document that determination, and a Decision Record issued providing the rational for approving the chosen alternative.

1.2 Background

The Swasey HMA comprises about 120,113 acres of public and other land. The HMA is located in Juab and Millard Counties, about 50 miles west from Delta, Utah. See Map 1.

The Appropriate Management Level (AML) for wild horses within the HMA is 60-100. The AML was established in the October/1987 House Range Resource Area RMP/ROD following an in-depth analysis of habitat suitability and resource monitoring and population inventory data, with public involvement. The AML upper limit is the maximum number of wild horses that can graze in a thriving natural ecological balance and multiple use relationship on the public lands in the area. Establishing AML as a population range allows for the periodic removal of excess animals (to the low range) and subsequent population growth (to the high range) between removals.

The current estimated population of wild horses is 350. This number is based on an aerial survey direct count population inventory (conducted 2011), adjusting the number 20% to account for horses missed due to terrain and cover and for marker horses not seen, and includes the addition of the 2012 foal crops. Wild horse numbers have increased an average of 18 % per year since the HMA was last gathered. The current population is about 5 times over the AML lower limit.

The HMA was last gathered in July, 2007. At that time, 155 wild horses were gathered and removed from the HMA. Post-gather, an estimated 180 wild horses with a sex ratio of 60/40% males/females remained within the HMA.

Based upon all information available at this time, the BLM has determined that 164 excess wild horses exist within the HMA and need to be removed. This assessment is based on the following factors including, but not limited to

❒ A direct count of 171 wild horses, with an estimated 20% or 34 horses not counted due to terrain and cover, conducted in February, 2010 showed 135 horses in excess of the AML lower limit. After the

foaling seasons (2010, 2011 and 2012), it is expected to have a population of 349 wild horses (based on a 20% population increase), 279 horses in excess of the AML lower limit.

- ❒ Use by wild horses is exceeding the forage allocated to their use by 2.5 times based on allocations established in the October/1987 House Range Resource Area RMP/ROD.
- ❒ Utilization monitoring completed in 2011 and 2012 documents increased utilization by wild horses on key forage species across the HMA.
- ❒ Wild horse numbers are increasing into areas outside the HMA not normally used.

1.3 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to remove excess wild horses within the Swasey HMA. Fertility control would also be applied to the mares released following the gather of the Swasey HMA and adjustment of sex ratios to favor males. Any wild horses located outside the HMAs (in areas not designated for their use) would also be removed.

This action is needed in order to achieve and maintain a population size within the established AML, maintain Utah Rangeland Health Standards, and protect rangeland resources from further deterioration associated with the current overpopulation, and restore a thriving natural ecological balance and multiple use relationship on public lands in the area consistent with the provisions of Section 3(b)(2) of the Wild Free-Roaming Horses and Burros Act of 1971 (WFRHBA) 1.

1.4 Land Use Plan Conformance

The Action Alternatives are in conformance with the:

- ❒ House Range Resource Area Resource Management Plan/Record of Decision Rangeland Program Summary (RMP/ROD), 1987, Chapter 2, p 47.

1.5 Relationship to Laws, Regulations, and Other Plans

Statutes and Regulations

The Action Alternatives are in conformance with Public Law 92-195 (WFRHBA) as amended by Public Law 94-579 (FLPMA), and Public Law 95-514 (Public Rangelands Improvement Act [PRIA] of 1978. WFRHBA, as amended, requires the protection, management, and control of wild free-roaming horses and burros on public lands. And the preparation and transport of wild horses will be conducted in conformance with all applicable state statutes.

The Proposed Action is in conformance with all applicable regulations at 43 Code of Federal Regulations (CFR) § 4700 and BLM policies. The following excerpts from 43 CFR relating to the protection, management, and control of wild horses under the administration of the BLM included are:

- ❒ **43 CFR 4700.0-2 Objectives**
  Management of wild horses and burros as an integral part of the natural ecosystem of the public lands under the principle of multiple use.

- ❒ **43 CFR 4700.0-6(a-c) Policy**
  Requires that BLM manage wild horses "…as self-sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat … consider comparably with other resource values …" while at the same time "…maintaining free-roaming behavior."

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1 The Interior Board of Land Appeals (IBLA) defined the goal for managing wild horse (or burro) populations in a thriving natural ecological balance as follows: "As the court stated in Dahl vs. Clark, supra at 594, the 'benchmark test' for determining the suitable number of wild horses on the public range is 'thriving natural ecological balance.' In the words of the conference committee which adopted this standard: 'The goal of WH&B management should be to maintain a thriving ecological balance (TNEB) between WH&B populations, wildlife, livestock and vegetation, and to protect the range from the deterioration associated with overpopulation of wild horses and burros.'"

- **43 CFR 4700.06(e) Policy**
  Healthy excess wild horses for which an adoption demand by qualified individuals exists shall be made available at adoption centers for private maintenance and care.

- **43 CFR 4710.3-1 Herd management areas.**
  Herd management areas shall be established for the maintenance of wild horse and burro herds. In delineating each herd management area, the authorized officer shall consider the appropriate management level for the herd, the habitat requirements of the animals, the relationships with other uses of the public and adjacent private lands, and the constraints contained in 4710.4. The authorized officer shall prepare a herd management area plan, which may cover one or more herd management areas.

- **43 CFR 4710.4 Constraints on management.**
  Management of wild horses and burros shall be undertaken with limiting the animals' distribution to herd areas. Management shall be at the minimum feasible level necessary to attain the objectives identified in approved land use plans and herd management area plans.

- **43 CFR 4720.1 Removal of excess animals from public lands.**
  Upon examination of current information and a determination by the authorized officer that an excess of wild horses or burros exists, the authorized officer shall remove the excess animals immediately.

- **43 CFR 4740.1 Use of motor vehicles or aircraft.**
  (a) Motor vehicles and aircraft may be used by the authorized officer in all phases of the administration of the Act, except that no motor vehicle or aircraft, other than helicopters, shall be used for the purpose of herding or chasing wild horses or burros for capture or destruction. All such use shall be conducted in a humane manner.
  (b) Before using helicopters or motor vehicles in the management of wild horses or burros, the authorized officer shall conduct a public hearing in the area where such use is to be made.

Under 43 CFR 4180, it is required that all BLM management actions achieve or maintain healthy rangelands.

All federal actions must be reviewed to determine their probable effect on threatened and endangered plants and animals (the Endangered Species Act).

Executive Order 13212 directs the BLM to consider the President's National Energy Policy and adverse impacts the alternatives may have on energy development.

The Proposed Action is in conformance with Decision Records and Finding of No Significant Impacts for the EA-UT-010-07-035 Integrated Wild Horse Management for the Swasey Herd Management Area, (7/07); J-010-002-047 Emergency Wild Horse Removal from Conger, Confusion, and Swasey HMAs (7/15/02); Removal of Wild Horses from the Swasey Herd Management Area (1998); Removal of Wild Horses from the Swasey Herd Management Area (1996); and Swasey Wild Horse Removal (1993).

All supplemental authorizations contained in Appendix 1 of the National NEPA Handbook 1790-1.

1.6 Decision to be Made

The authorized officer would determine whether to implement the proposed population control measures in order to achieve and maintain population size within the established AML and protect the range from deterioration resulting from the current wild horse overpopulation. The authorized officer's decision is limited to the need to remove excess wild horses and to implement fertility control and sex ratio

adjustments to achieve and maintain population size within AML. It would not set or adjust AML nor would it adjust livestock use, as these were set through previous decisions.

The No Action Alternative would not achieve the identified Purpose and Need. However, it is analyzed in this EA to provide a basis for comparison with the other action alternatives, and to assess the effects of not conducting a gather at this time. The No Action Alternative is in violation of the requirement under the Wild Free-Roaming Horses and Burros Act that the Secretary remove excess horses, and in also not in conformance with regulatory provisions for management of wild horses and burros as set forth at 43 CFR § 4700.

1.7 Scoping and Identification of Issues

Consultation and coordination with BLM, State Historic Preservation Office (SHPO), the Utah Division of Wildlife Resources (UDWR), US Fish & Wildlife Service (USFWS), Native American Indian tribes and routine business contacts with livestock operators and others, has underscored the need for the BLM to maintain wild horse and burro populations within the AML.

The Proposed Action was posted on the Electronic Notification Bulletin Board (ENBB) August 29, 2012 for public notification. The Utah State Office initiated public involvement at a public hearing about the use of helicopters and motorized vehicles to capture and transport wild horses (or burros) on July 13, 2012 at the BLM's Fillmore Field Office in Fillmore, Utah. This specific gather was addresses at the public meeting as well as other gathers that may occur within the state of Utah over approximately the next 12 months. This meeting was advertised in papers and radio stations statewide. Refer to the Public Involvement section (Appendix 11) to see comments and interest from the public and organizations.

The following issues were identified as a result of consultation/coordination and internal scoping relative to the BLM's management of wild horses in the planning area:

1. Impacts to individual wild horses and the herd. Measurement indicators for this issue include:

    - Expected impacts to individual wild horses from handling stress
    - Expected impacts to herd social structure
    - Expected effectiveness of proposed fertility control application
    - Potential effects to genetic diversity
    - Potential impacts to animal health and condition

2. A need to implement different or additional population control methods in order to maintain population size within AML over the long-term. Measurement indicators for the issue include:

    - Projected population size and annual growth rate (WinEquus population modeling)
    - Projected gather frequency
    - Projected number of excess animals to be removed and placed in the adoption, sale, and short and long-term holding pipelines over the next 10 years

3. Impacts to vegetation/soils, riparian/wetland, and cultural resources (*as applicable*). Measurement indicators for this issue include:

    - Expected forage utilization;
    - Potential impacts to vegetation/soils and riparian/wetland resources.

4. Impacts to wildlife, migratory birds, and threatened, endangered, and special status species and their habitat (*as applicable*). Measurement indicators for this issue include:

- Potential for temporary displacement, trampling or disturbance
- Potential competition for forage and water over time.
- In adequate or poorly maintained water sources to spread forage use of the HMA by wild horses.

1.7.1 Critical Elements of the Human Environment and other Resources/Areas of Concern

Identification of issues for this assessment was accomplished by considering the resources that could be affected by implementation of one of the alternatives, though involvement with the public and input from the BLM interdisciplinary team.

Critical elements of the human environment, as identified in BLM Handbook 1790-1, Appendix 5, must be considered. Resources within the project area that may be affected must also be discussed. Those critical elements of the human environment and resources which are not present, or are not affected by the Proposed Action or alternatives, are included as part of the Interdisciplinary Team checklist (Appendix 1). Rationale for dismissing specific resources or critical elements is also contained in Appendix 1.

Those critical elements of the human environment and resources which may be affected by the Proposed Action and/or alternatives are carried forward throughout this analysis, and are discussed briefly as follows.

1.7.1.1 Rangeland Health/Vegetation

Removal of excess wild horses would contribute to the improvement of rangeland health as stated in the Rangeland Heath Standards and Guidelines (Appendix 3).

Drought conditions in 2008-2009 and 2012 and overpopulation of wild horses in 2010-2012 have reduced forage production in some of the key wild horse habitat areas. Excess wild horses grazing these areas during critical growth periods along with the reduced vigor of the plants because of the drought, has cause some mortality of key species throughout the HMA. Inadequate residual vegetation (forage) and litter remaining due to the excess grazing of wild horses and other authorized large animals contributes to the exposure of bare ground and the loss of soil through erosion. Precipitation data indicates that the HMA had received only 63% of normal moisture during the growing season. Fall thunderstorms outside the growing season were received promoting some vegetative growth on the cool season grasses and filling stock ponds relieving pressure from perennial spring sources. Utilization completed May 31, 2012 showed heavy to severe use within the Tatow Allotment on the key species and moderate use within the Swasey Knoll, Sand Pass, and Antelope Allotments. These use levels normally occur on HMA at the end of summer and not at the beginning.

1.7.1.2 Livestock Grazing

Portions of four (4) grazing allotments are part of the HMA. All of these allotments have livestock grazing permits. Of these, two are sheep allotments (Sand Pass and Swasey Knoll), and two are sheep and cattle allotments (Antelope and Tatow). Overlap of areas of use between wild horses and livestock does occur on specific sites on all the allotments causing competition for forage, water and space. Wild horses, wildlife, and livestock compete directly for the same space, water and forage resources. Year-long wild horse grazing reduces forage availability for livestock. Grazing by excess wild horses during the critical growing season and during drought conditions can reduce forage production, vigor, reproduction, and availability for several years. Detailed information about the authorized livestock use within the HMA is provided in the Term Grazing Permit Renewal EA UT-010-04-72 for these allotments and is incorporated by reference in this EA.

1.7.1.3 Wild Horses and Burros

Rangeland resources and wild horse health have been and are currently being affected within the Swasey HMA, due to drought and overpopulation. Excess wild horses above AML have reduced available water and forage, resulting in increased competition for available resources. Wild horses have expanded outside the HMA in search of forage, water, and cover. The gather and removal of wild horses from the Swasey HMA would have direct and indirect impacts to individual animals and the social structure of bands in the area. Most impacts would be short term (less than 1 year), but some would be long term (greater than one year). These impacts will be discussed within this EA.

2.0 Proposed Action and Alternatives

2.1 Introduction

This section of the EA describes the Proposed Action and alternatives, including any that were considered but eliminated from detailed analysis. Three alternatives are considered in detail:

- **Alternative 1:** No Action – Continue existing management. No gather and removal.
- **Alternative 2:** Proposed Action – Gather and removal of excess wild horses, and apply fertility control to mares prior to release.
- **Alternative 3:** Gather

Alternative 1 and the Proposed Action were developed to respond to the identified resource issues and the Purpose and Need to differing degrees. Alternative 1 (No Action) would not achieve the identified Purpose and Need. However, it is analyzed in this EA to provide a basis for comparison with the other action alternatives, and to assess the effects of not conducting a gather at this time. The No Action Alternative is in violation of the WFRHBA which requires the BLM to immediately remove excess wild horses.

2.2 Description of Alternatives Considered in Detail

2.2.1 Management Actions Common to Alternatives 2-3 for Gather and Removal.

- ❑ Gather operations would be conducted in accordance with the Standard Operating Procedures (SOPs) described in Appendix 5 and/or in the National Wild Horse and Burro Gather Contract as adjusted or amended through the National and State Wild Horse and Burro Program direction.
- ❑ Gather operations involve areas beyond the HMA boundaries as displayed on Maps 1.
- ❑ Trap sites and temporary holding facilities will be located in previously used sites or other disturbed areas whenever possible. Undisturbed areas identified as potential trap sites or holding facilities would be inventoried for cultural resources. If cultural resources are encountered, these locations would not be utilized unless they could be modified to avoid impacts to cultural resources.
- ❑ When gather objectives require efficiencies of 50-80% or more of the animals to be captured from multiple gather sites (traps) within the Swasey HMA, the helicopter drive method and helicopter assisted roping from horseback will be the primary gather methods used. Post gather, every effort would be made to return released animals to the same general area from which they were gathered.
- ❑ Gather operations in Wilderness Study Areas (WSAs) would be conducted by herding animals by helicopter to the temporary gather sites located outside WSA boundaries. No landing of aircraft would occur in WSAs except for emergency purposes and no motorized vehicles would be used in WSAs in association with the gather operation unless such use is consistent with the minimum requirements for management of WSAs and is preapproved by the authorized officer.
- ❑ Given a summer or early fall gather window, bait and/or water trapping may be used provided the gather operations timeframe is consistent with current animal and resource conditions. Bait and/or water trapping may also be selected in other special circumstances as appropriate.

- Animals would be removed using a selective removal strategy. Selective removal criteria for the Swasey HMA would include: (1) First Priority: Age Class – Five Years and Younger; (2) Second Priority: Age Class – Six to Ten Years Old; Third Priority: Age Class Eleven Years and older.
- Data including sex and age distribution, condition class information (using the Henneke rating system), color, size and other information may also be recorded, along with the disposition of that animal (removed or released).
- Hair samples would be acquired every gather, to determine whether BLMs management is maintaining acceptable genetic diversity (avoiding inbreeding depression).
- Excess animals would be transported to the BLM Delta Wild Horse Facility where they will be prepared (freeze-marked, vaccinated and de-wormed) for adoption, sale (with limitations) or long-term holding.
- A BLM contract Veterinarian, Animal and Plant Health Inspection Service (APHIS) Veterinarian or other licensed Veterinarian would be on site as the gather is started ad then as needed for the duration of the gather to examine animals and make recommendations to the BLM for the care and treatment of wild horses, and ensure humane treatment. Additionally animals transported to the BLM Delta Wild Horse Facility are inspected by facility staff and the BLM contract Veterinarian, to observe health and ensure the animals have been cared for humanely. Noxious weed monitoring at gather sites and temporary holding corrals would be conducted in the spring and summer of 2011 by BLM. Treatment would be provided, if necessary, following guidance from the Noxious Weed Control EA# J-010-099-015EA. Mitigation measures would be followed to eliminate the spread of noxious/invasive weeds as outlined in Noxious Weed Clearance Fillmore Field Office dated December 15, 2009.
- Monitoring of rangeland forage condition and utilization, water availability, aerial population surveys and animal health would continue.
- A comprehensive post-gather aerial population inventory would occur within 12 months following the completion of the gather operation.

2.2.2 Alternative 1. No Action

Under the No Action Alternative, no gather would occur and no additional management actions would be undertaken to control the size of the wild horse population at this time.

2.2.3 Alternative 2. Conger Mountain HMA. Proposed Action

The Proposed Action would gather about 260 and remove approximately 160 excess wild horses from within and outside the Swasey Herd Management Area (HMA) beginning in about January, 2013. Animals would be removed using a selective removal strategy. Selective removal criteria for the HMA include: (1) First Priority: Age Class - Five Years and Younger; (2) Second Priority: Age Class - Six to Ten Years Old; (3) Third Priority: Age Class Eleven Years and Older. Up to 100 of the captured wild horses would be released; of these, about 50 would be mares treated with fertility control and about 50 would be studs as follows:

- Mares would be treated with a two-year Porcine Zona Pellucida (PZP-22) or similar vaccine and released back to the range. Fertility control treatment would be conducted in accordance with the approved standard operating and post-treatment monitoring procedures (SOPs, Appendix B). Mares would be selected to maintain a diverse age structure, herd characteristics and conformation (body type).
- Studs would be selected for release with the objective of maintaining a 60%/40% male/female sex ratio. Studs would be selected to maintain a diverse age structure, herd characteristics and body type (conformation).
- Post-gather, every effort would be made to return released horses to the same general area from which they were gathered.

2.2.4 Alternative 3: Removal Only

In addition to the actions described in Section 2.1.1, Alternative 2 would gather and remove about 160 excess wild horses from within and outside the Swasey HMA beginning in about January, 2013. Fertility control would not be applied and no changes to the herds' existing sex ratios would be made. Post-gather sex ratios for the Swasey HMA would be expected to remain at 60%/40% males to females.

2.3 Summary Comparison of Alternatives

Table 1: Summary Comparison of the Alternatives

Item	Alternative 1: No Action	Alternative 2 Proposed Action	Alternative 3:
<u>Impacts to Wild Horses</u> • Gather Number • Removal Number • Fertility Control - # Mares • Post-Gather Sex Ratio • Post-Gather Population Size	• No impacts to wild horses from gather operations, fertility control or sex ratio adjustments. • Population levels would continue to rise above levels that the HMAs could sustain long term. Horses would expand outside established HMAs looking for forage, water, space and cover increasing impacts to those areas where there is no allocation for wild horse use.	• Wild horses (gather and removal) would experience handling stress associated with gather operations which would vary by individual and intensity and range from nervous agitation to physical distress. • Mares treated with the PZP contraceptive would experience slightly higher stress levels from increased handling while being inoculated and freeze marked. These direct impacts would be minor and short in duration. • Sex ratio adjustments would slow the population increase of the herd reducing the need for more frequent gather and removal operations. • Post gather population would have access to adequate space, forage, water, cover and genetic diversity within HMAs for long-term existence.	• Impacts to wild horses gathered and removed would be the same as Alternative 1: Proposed Action • No impacts to wild horses from fertility control application. • Sex Ratios would remain as at the current levels for each HMA. • Post gather population would have access to adequate space, forage, water, cover and genetic diversity within HMAs for long-term existence.
Impacts to Vegetation/Soils and Riparian/Wetland Resources	• Increased levels of utilization on vegetation resulting in the loss of ground cover which could attribute to the increased loss of soil through erosion.	• Utilizations levels on forage species would be within appropriate levels. • Impacts to soils and riparian/wetland resources would be within expected and acceptable levels.	• Same as Alternative 2: Proposed Action
Impacts to Migratory Birds, Wildlife and TES	• Increased competition for available forage	• Impacts to Migratory Birds, Wildlife and TES	• Same as Alternative 2: Proposed Action

	among wildlife species and potential increased impacted to areas outside HMAs which could impact other wildlife, migratory birds and TES	would be within in the acceptable levels identified in the approved planning documents. Competition levels and displacement of species would be lowered allowing for diversity to continue within HMAs.	.

2.4 Alternatives Considered but Dismissed from Detailed Analysis

2.4.1 Use of Bait and/or Water Trapping

It would not be timely, cost-effective or practical to use bait and/or water trapping as the primary gather method to remove the excess horses located within the Swasey HMA in order to achieve AML without risking increased degradation to the rangelands. As a result, this alternative was dismissed from detailed analysis.

2.4.2 Remove or Reduce Livestock within the HMA

This alternative was not considered in detail because it is contrary to previous decisions which allocated forage for livestock use. Such an action would not be in conformance with the existing land use plan, would be contrary to the BLM's multiple-use mission as outlined in the 1976 Federal Land Policy and Management Act (FLPMA), and would also be inconsistent with the WFRHBA, which directs the Secretary to immediately remove excess wild horses. Livestock grazing can only be reduced or eliminated following the process outlined in the regulations found at 43 CFR Part 4100. Such changes do not meet the need for the proposed action and are beyond the scope of the decision to be made, and cannot be made through a wild horse gather decision.

2.4.3 Wild Horse Numbers controlled by Natural Means

This alternative was eliminated from further consideration because it is contrary to the WFRHBA which requires the BLM to prevent the range from deterioration associated with the over population of wild horses. It is also inconsistent with the House range Resource Area RMP, which directs the Fillmore Field Office BLM to conduct gathers as necessary to achieve and maintain AML. This alternative of using natural controls to achieve a desirable AML has not been shown to be feasible in the past. Wild horses in the Swasey HMA are not substantially regulated by predators. In addition, wild horses are a long lived species with documented foal survival rates exceeding 95% and they are not a self-regulating species. This alternative would result in a steady increase in numbers which would continually exceed the caring capacity of the range until severe and unusual conditions that occur periodically – such as large snow storm events or extreme drought – cause catastrophic mortality of wild horses.

2.4.4 Fertility Control Treatment Only (No Removal)

Population modeling was completed to analyze the potential impacts associated with conducting gathers about every 3 years over the next 10 year period to treat captured mares with fertility control. Under this alternative, no excess wild horses would be removed. While the average population growth would be reduced to about 15 % per year, AML would not be achieved and the damage to the range associated with wild horse overpopulation would continue. This alternative would not meet the Purpose and Need for the Action, and would be contrary to the WFRHBA, and was dismissed from further study.

3.0 Affected Environment

This section of the EA briefly discusses the relevant components of the human environment which would be either affected or potentially affected by the Action Alternatives or No Action (refer to Table 2). Direct impacts are those that result from the management actions while indirect impacts are those that exist once the management action has occurred.

3.1 General Description of the Affected Environment

The Swasey HMA encompasses 120,113 acres of public and private land, within Juab and Millard Counties, Utah, (Map 1). The HMA includes the Swasey Mountain of the House Range, Whirlwind and Tule Valleys as topographic features. This range is made up of long, narrow and steep ridges with large flats areas in Whirlwind Valley. Elevation varies from 9600 feet to 4500 feet. Precipitation averages 4-6 inches at lower elevations to 6-8 inches at the highest elevations. Temperatures also vary, from 0 and -10 degrees Fahrenheit in winter to between 100 and 105degrees Fahrenheit in summer.

Vegetation in the area is made up of three main vegetative types. Saltbush-grass type, black sage-grass type, and rabbit brush-grass type. There are a few juniper trees that occur on the tops of the low mountain ridges. Key species include indian ricegrass (*Oryzopsis hymenoides*), bottlebrush squirreltail (*Sitanion hystrix*), galletta (*Hilaria jamesii*), needleandthread (*Stipa comata*), sand dropseed (*Sporobolus cryptandrus*) and winterfat (*Ceratoides lanata*). Other forage species include:

Grasses	Forbs	Shrubs
Basin wildrye	Scarlet globemallow	Black sagebrush
(Elymus cinereus)	*(Sphaeralcea coccinea)*	*(Atremisia nova)*
Muttongrass	Buckwheat	Shadscale
(Poa fendleriana)	*(Eriogonum)*	*(Artriplex confertifolia)*
Western wheatgrass		Ephedra
(Agropyron smithii)		*(Ephedra nevadensis)*
Mountain brome		Big sagebrush
(Bromus carinatus)		(*Artemisia tridentate)*
Bluebunch wheatgrass		Budsage
(Agropyron spicatum)		*(Artemisia spinescens)*
Prairie junegrass		
(Koeleria macrantha)		

Permanent waters are located on the southeast side of the HMA below Swasey Peak. Several of these waters have been developed and are piped to various portions of the HMA to distribute availability. Horses also water at Coyote Springs which is located on the west side of the HMA in Tule Valley. Water is also available occasionally at several springs on the north end and catchment ponds throughout the HMA after large storm events.

3.2 Description of Affected Resources/Issues

Table 2 lists the elements of the human environment subject to requirements in statute, regulation, or executive order which must be considered.

Table 2: Supplemental Authorities (Critical Elements of the Human Environment)

Supplemental Authorities	Present	Affected	Rationale
ACECs	**NO**	**NO**	Not Present

Air Quality	**YES**	**NO**	The planning area is outside a non-attainment area. Implementation of the Proposed Action would result in small and temporary areas of disturbance and associated dust emissions.
Cultural Resources	**YES**	**NO**	To prevent any impacts to cultural resources, trap sites and temporary holding facilities would be located in previously disturbed areas. Cultural resource inventory and clearance would be required prior to using trap sites or holding facilities outside existing areas of disturbance. (Refer to SHPO Project No. U-10-BL-0259b required item 12)
Environmental Justice	**YES**	**NO**	Implementation of the proposed action would not have a noticeable impact on environmental justice in Millard and Juab Counties.
Fish Habitat	**NO**	**NO**	Not present.
Floodplains	**NO**	**NO**	There are no flodplains that may be adversely impacted and the proposed action is in compliance with Executive Order 11988 on Floodplain Management
Forest and Rangelands	**YES**	**YES**	No impact to Forestry. Rangelands and Rangeland Health discussed below.
Migratory Birds	**NO**	**NO**	Given the low magnitude and short duration of the proposed action, no impacts to migratory birds are anticipated. Migratory birds may benefit from the reduction of herd numbers.
Native American Religious Concerns	**YES**	**NO**	Letters were sent to Tribes September 13, 2012. The Paiute Tribe of Utah sent a letter back September 26, 2012 stating they had no comments or concerns.
Noxious Weeds	**YES**	**NO**	To prevent the risk for spread, any noxious weeds or non-native invasive weeds would be avoided when establishing and accessing trap sites and holding facilities.
Prime or Unique Farmlands	**NO**	**NO**	Not present.
Riparian-Wetland Zones	**YES**	**NO**	Reduction of the numbers of wild horses by implementation of the proposed action would result in reduced use of riparian vegetation by wild horses. Direct disturbance of riparian areas is not anticipated.
T&E Species	**NO**	**NO**	There are no known federally listed fish or wildlife species within the proposed wild horse gather operation.
Water Quality	**YES**	**NO**	There would be no impacts to water resources/quality.
Waste (Hazardous or Solid)	**NO**	**NO**	Not present.
Wild and Scenic Rivers	**NO**	**NO**	There are no Wild and Scenic Rivers within the proposed project location per PL111.11.
Wilderness and Wilderness Study Area	**YES**	**NO**	No direct disturbance in WSAs or Wilderness areas. Gather operations in Wilderness Study Areas (WSAs) would be conducted by herding animals by helicopter to the temporary gather sites located outside WSA boundaries.

Critical elements of the human environment identified as present and potentially affected by the Action Alternatives (Alternative 2-3) and/or the No Action Alternative include: Rangelands and Rangeland Health. In addition to the critical elements listed in Table 2, the following resources may be affected by the Action Alternatives and/or the No Action Alternative: Wild Horses and Livestock Grazing. The existing situation (affected environment) relative to these resources is described below.

3.2.1 Livestock

The Antelope, Sand Pass, Swasey Knoll, and Tatow Allotments are within the Swasey HMA. There are a total of 7 livestock operators who are currently authorized to graze livestock in these allotments annually. The operators are authorized to use 13,954 Animal Unit Months (AUMs) of forage each year. An AUM is the amount of forage needed to sustain one cow, five sheep, or five goats for a month. The season of use may vary by 1-2 weeks annually based upon forage availability, drought conditions, and other management criteria.

The BLM allocated forage for livestock use through the House Range Resource Area RMP/ROD, 1987. AML was established as a population range 60 -100 in the House Range Resource Area Final EIS/RMP, 1986. Adjustments in permitted use have been made through Allotment Management Plans as conditions have changed such as drought and class of livestock changes.

Table 3 summarizes the livestock use information for the allotments in the HMA(s).

Table 3: Livestock Use Information

Allotment	Total Allotment Acres	% of Allotment in HMA	Permittee	Livestock	Authorized Season of Use	Authorized Livestock AUMs (Preference Entire Allotment)	Suspended AUMs or AUMs in (Nonuse Entire Allotment)
Antelope	79,707	43%	1 2	2642 Sheep 19 Cattle	11/01 – 04/30 05/01 – 09/30	3181	
Sand Pass	36,539	44%	1	1609 Sheep	11/01 – 04/30	1915	200
Swasey Knoll	56,040	35%	1	4092 Sheep	11/01 – 04/30	4562	
Tatow	67,122	95%	1 2 3	1700 Sheep 43 Cattle 11 Cattle	11/01 – 04-30 05/01 – 09/30 05/01 – 09/30	4076 165 55	423 30 21

3.2.2 Rangeland Health Standards

The Standards for Rangeland Health indicate that the potential for soil erosion would be reduced (*Standard 1. Upland soils exhibit permeability and infiltration rates that sustain or improve site productivity, considering the soil type, climate, and landform*) and riparian areas would receive less grazing pressure which in turn would reduce the impacts to these riparian areas (*Standard 2. Riparian and wetland areas are in properly functioning condition. Stream channel morphology and functions are appropriate to soil type, climate and landform*) and would contribute to the maintenance of desired species (*Standard 3. Desired species, including native, threatened, endangered and special-status species, are maintained at a level appropriate for the site and species involved*). Therefore, the potential for maintenance of rangeland health would be increased by removing the wild horses to keep their numbers on the HMA within the appropriate management level. If no action is taken, rangeland health will deteriorate in areas where wild horses spend most of their time. Riparian vegetation would be affected and soil erosion would increase as desired vegetation is removed from the range.

Rangeland Health Assessments were completed on the Antelope Allotment (2000), Sand Pass Allotment (1999), Swasey Knoll (2009), and Tatow Allotment (1999). Each reference area on these allotments were determined to be in Proper Functioning Condition and was in compliance with Rangeland Health Standards and in conformance with the Guidelines for Grazing Management for BLM Lands in Utah (USDI 1997).

Actual grazing use, vegetation utilization, trend, and climate analysis are basic range studies that are used to analyze rangeland vegetation conditions over time. Actual use, utilization, and climate data are

gathered annually. Trend studies are key, long-term studies used to detect vegetative changes over time. The following table summarizes the individual trend studies on each of the allotments with in the Swasey HMA. Listed below is the overall trend for each of the four allotments:

Allotment	Overall Trend
Antelope	Slightly Upward
Sand Pass	Slightly Upward
Swasey Knoll	Slightly Upward
Tatow	Upward

3.2.3 Wild Horses

The Swasey HMA was formally designated as a Herd Management Area (HMA) through the House Range Resource Area RMP/ROD, 1987. AML was established through site vegetation inventory monitoring and data collection as a population range 60 -100 in the House Range Resource Area Final EIS/RMP, 1986.

Table 4 summarizes the AML, current population, and estimated removal numbers for the HMA under the Proposed Action.

Table 4: Summary of Wild Horse Population Information

HMA	Acres	AML Range	Current Pop.	Proposed Target Gather	Proposed Target Remove	Target Treat (# Mares)	Adjust Sex Ratio (# Studs)	Est'd Post Gather Pop. Size
Swasey	120,113	60 - 100	350	262	100	49	51	165

The last removal of excess wild horses from the Swasey HMA was completed in July, 2007 when 162 horses were gathered and removed.

The current estimated population of wild horses in the Swasey HMA is based on a direct count aerial population survey completed in February, 2010 and projected numbers from historical data. Analysis of these data indicates an average annual growth rate of 20% since the last gather.

Utilization levels by wild horses on the rangelands within the complex have shown increases as the population has increased. Potential for loss of key forage species has increased as the amount of sustainable forage is depleted through higher levels of use. The past two years have exhibited extreme climatic conditions in which 2011 had above normal precipitation events and cooler temperatures allowing key vegetative species to thrive and 2012 with extreme drought conditions during the critical growing season for plant species. Drought events over the past ten years have shown the effects of limited resources for wild horses through body condition and range condition. Areas outside the complex are experiencing increased un-allotted use on forage species and resources by wild horses which have expanded outside the HMAs. These wild horses above AML need to be removed in order to protect the resources outside the complex and those resources within the complex to allow for proper rangeland health and herd sustainability.

Wild horses within the Swasey HMA are currently in thin to moderate body class conditions or a body condition score (BCS) class 3 – 5 on the Henneke BCS chart. Increased utilization levels have been observed by wild horses within key areas, which adversely impacts range health and inhibits recovery of the native vegetative communities in these key areas. Monitoring also indicates that wild horses have moved and are residing outside the Swasey HMA boundaries.

Hair samples will be collected for the Swasey HMA to establish baseline genetic diversity for the HMA

and to determine any changes in variation over time.

Table 5: Wild Horse Gather History

HMA	Fiscal Year	Removed
Swasey	1978	161
Swasey	1984	40
Swasey	1990	39
Swasey	1993	76
Swasey	1996	53
Swasey	1999	130
Swasey	2003	87
Swasey	2007	162

4.0 Environmental Consequences

4.1 Introduction

This section of the EA documents the potential environmental impacts which would be expected with implementation of the Action Alternatives (Alternatives 2-3), and/or the No Action Alternative. These include the direct impacts (those that result from the management actions) and indirect impacts (those that exist once the management action has occurred).

4.2 Predicted Effects of Alternatives

The direct and indirect impacts to these resources which would be expected to result with implementation of the Action Alternatives or No Action Alternative are discussed in detail below.

4.2.1 Livestock

Impacts of Alternative 1 (No Action)

Livestock would not be displaced or disturbed due to gather operations under the No Action Alternative. Utilization by authorized livestock has been directly impacted due to the current overpopulation of wild horses, both within and outside the HMA. The current wild horse population is 3 times above their forage allocation. Moderate to heavy utilization is occurring. The indirect impacts of No Action (Defer Gather and Removal) would be continued damage to the range, continuing competition between livestock, wild horses and wildlife for the available forage and water, reduced quantity and quality of forage and water. As wild horse number increase, livestock grazing within the HMA may have to be further reduced in an effort to slow the deterioration of the range to the greatest extent possible or because rangeland conditions do not support the multiple uses for which public lands are managed.

Impacts Common to Action Alternatives (2-3)

Livestock located near the gather activities may be temporarily disturbed or displaced by the helicopter and increased vehicle traffic during the gather operation. This displacement would be temporary and the livestock would move back into the area once gather operations are moved. Past experience has shown that gather activities have little impacts on grazing of cattle and sheep. No adjustments in permitted livestock use, active AUMs, season of use and/or terms and conditions would occur as a result or the Proposed Action. Direct impacts of the gather activities itself would be minor and short-term.

Indirect impacts to livestock grazing would be reduced competition between livestock and wild horses for the available forage and water. As a result, an increase in the quality and quantity of the available forage

in the short-term and over the longer-term, improved vegetation resources would lead to a thriving natural ecological condition.

Impacts of Alternative 2 (Proposed Action) **–** None that are not in common with other Alternatives.

Impacts of Alternative 3 **–** None that are not in common with other Alternatives.

4.2.2 Rangeland Health Standards

Impacts of Alternative 1(No Action)

Deterioration of rangeland health would continue to increase as population levels increase with no action. Those areas where wild horses spend a majority of their time would suffer from the loss of riparian vegetation, increased soil erosion and compaction and the desired plant species are removed from the range. Indirect impacts from no action would occur in areas not suitable for wild horses. These areas outside the HMAs would experience increased levels of use and may not be resilient enough to recover. Wild horses exist within the HMAs because their basic needs of water, desirable vegetation, cover and space are met. Areas outside the HMAs lack some if not all of these needs and would suffer from increased use.

Impacts Common to Action Alternatives (2-3)

Rangeland Health Standards are directly impacted by the levels of use experienced upon upland soils, riparian and wetland areas, desired plant species including native, threatened, endangered and special status species. A reduction in the number of wild horses toward the appropriate management levels within the HMA would allow increased maintenance of rangeland health. Over time as population levels are managed near AML, rangeland health would continue to improve allowing for the thriving ecological condition of all uses present.

Impacts of Alternative 2 (Proposed Action) **–** None that are not in common with other Alternatives.

Impacts of Alternative 3 **–** None that are not in common with other Alternatives.

4.2.3 Wild Horses

Impacts of Alternative 1(No Action)

If No Action is taken, excess wild horses would not be removed from within or outside the Swasey HMA at this time. The animals would not be subject to individual direct or indirect impacts as a result of a gather operation in January 2013. Over the short-term, individuals in the herds would be subject to increased stress and possible death as a result of the increase competition for water and forage as the wild horse population continues to grow. The number of areas experiencing severe utilization by wild horses would increase over time. This would be expected to result in increasing damage to rangeland resources throughout the HMA. Trampling and trailing damage by wild horses in/around riparian areas and water sources would also be expected to increase, resulting in larger, more extensive areas of bare ground. Competition for the available water and forage between wild horses, domestic livestock and native wildlife would increase.

Wild horses are a long-lived species with documented survival rates exceeding 92% for all age classes and do not have the ability to self-regulate their population size. Predation and disease have not substantially regulated wild horse population levels within or outside the Swasey HMA. Some mountain lion predation may occur, but does not appear to be substantial. Coyotes are not prone to prey on wild horses unless young or extremely weak. Other predators such as wolf or bear do not exist within the HMA. As a result, there would be a steady increase in the wild horse numbers for the foreseeable future,

which would continue to exceed the carrying capacity of the range. Individual horses would be at greater risk of death by starvation and lack of water. The population of wild horses would compete for the available water and forage resources, affecting mares and foals most severely. Social stress would increase. Fighting among stud horses would increase as they protect their position at scarce water sources, as well as injuries and death to all age classes of animals.

Significant loss of the wild horses in the HMA due to starvation or lack of water would have obvious consequences to the long-term viability of the herd. Continued decline of rangeland health and irreparable damage to vegetative, soil and riparian resources, would have the obvious impacts to the future of the HMA and other users of the resources, which depend upon them for survival. As a result, the No Action Alternative would not ensure healthy rangelands, would not allow for the management of a healthy, self-sustaining wild horse population, and would not promote a thriving natural ecological balance.

As populations continue to increase beyond the capacity of the available habitat, more bands of horses would leave the boundaries of the HMA in search of forage and water. This alternative would result in increasing numbers of wild horses in areas not designated for their use, would be contrary to the Wild Free-Roaming Horse and Burro Act and would not achieve the stated objectives for wild horse herd management areas, to "prevent the range from deterioration associated with overpopulation," and "preserve and maintain a thriving natural ecological balance and multiple use relationship in that area."

Impacts Common to Action Alternatives (2-3)

Over the past 35 years, various impacts to wild horses as a result of gather activities have been observed. Under the Proposed Action, impacts to wild horses would be both direct and indirect, occurring to both individual horses and the population as a whole.

The BLM has been conducting wild horse gathers since the mid-1970s. During this time, methods and procedures have been identified and refined to minimize stress and impacts to wild horses during gather implementation. The SOPs in Appendix B would be implemented to ensure a safe and humane gather occurs and would minimize potential stress and injury to wild horses.

In any given gather, gather-related mortality averages only about one half of one percent (0.5%), which is very low when handling wild animals. Approximately, another six-tenths of one percent (0.6%) of the captured animals could be humanely euthanized due to pre-existing conditions and in accordance with BLM policy (GAO-09-77). These data affirm that the use of helicopters and motorized vehicles has proven to be a safe, humane, effective, and practical means for the gather and removal of excess wild horses (and burros) from the public lands. The BLM also avoids gathering wild horses by helicopter during the 6 weeks prior to and following the peak foaling season (i.e., March 1 through June 30).

Individual, direct impacts to wild horses include the handling stress associated with the roundup, capture, sorting, handling, and transportation of the animals. The intensity of these impacts varies by individual, and is indicated by behaviors ranging from nervous agitation to physical distress. When being herded to trap site corrals by the helicopter, injuries sustained by wild horses may include bruises, scrapes, or cuts to feet, legs, face, or body from rocks, brush or tree limbs. Rarely, wild horses will encounter barbed wire fences and will receive wire cuts. These injuries are very rarely fatal and are treated on-site until a veterinarian can examine the animal and determine if additional treatment is indicated.

Other injuries may occur after a horse has been captured and is either within the trap site corral, the temporary holding corral, during transport between facilities, or during sorting and handling. Occasionally, horses may sustain a spinal injury or a fractured limb but based on prior gather statistics, serious injuries requiring humane euthanasia occur in less than1 horse per every 100 captured. Similar

injuries could be sustained if wild horses were captured through bait and/or water trapping, as the animals still need to be sorted, aged, transported, and otherwise handled following their capture. These injuries result from kicks and bites, or from collisions with corral panels or gates.

To minimize the potential for injuries from fighting, the animals are transported from the trap site to the temporary (or short-term) holding facility where they are sorted as quickly and safely as possible, then moved into large holding pens where they are provided with hay and water. On many gathers, no wild horses are injured or die. On some gathers, due to the temperament of the horses, they are not as calm and injures are more frequent. Overall, direct gather-related mortality averages less than 1%.

Indirect individual impacts are those impacts which occur to individual wild horses after the initial stress event, and may include spontaneous abortions in mares, and increased social displacement and conflict in studs. These impacts, like direct individual impacts, are known to occur intermittently during wild horse gather operations. An example of an indirect individual impact would be the brief skirmish which occurs among older studs following sorting and release into the stud pen, which lasts less than two minutes and ends when one stud retreats. Traumatic injuries usually do not result from these conflicts. Like direct individual impacts, the frequency of occurrence of these impacts among a population varies with the individual.

Spontaneous abortion events among pregnant mares following capture is also rare, though poor body condition can increase the incidence of such spontaneous abortions. Given the timing of this gather, spontaneous abortion is not considered to be an issue for the proposed gather.

A few foals may be orphaned during a gather. This can occur if the mare rejects the foal, the foal becomes separated from its mother and cannot be matched up following sorting, the mare dies or must be humanely euthanized during the gather, the foal is ill or weak and needs immediate care that requires removal from the mother, or the mother does not produce enough milk to support the foal. On occasion, foals are gathered that were previously orphaned on the range (prior to the gather) because the mother rejected it or died. These foals are usually in poor, unthrifty condition. Every effort is made to provide appropriate care to orphan foals. Veterinarians may administer electrolyte solutions or orphan foals may be fed milk replacer as needed to support their nutritional needs. Orphan foals may be placed in a foster home in order to receive additional care. Despite these efforts, some orphan foals may die or be humanely euthanized as an act of mercy if the prognosis for survival is very poor.

Through the capture and sorting process, wild horses are examined for health, injury and other defects. Decisions to humanely euthanize animals in field situations would be made in conformance with BLM policy. BLM Euthanasia Policy IM-2009-041 is used as a guide to determine if animals meet the criteria and should be euthanized (refer to SOPs, Appendix 5). Animals that are euthanized for non-gather related reasons include those with old injuries (broken or deformed limbs) that cause lameness or prevent the animal from being able to maintain an acceptable body condition; old animals that have serious dental abnormalities or severely worn teeth and are not expected to maintain an acceptable body condition, and wild horses that have serious physical defects such as club feet, severe limb deformities, or sway back. Some of these conditions have a causal genetic component and the animals should not be returned to the range to prevent suffering, as well as to avoid amplifying the incidence of the problem in the population.

Wild horses not captured may be temporarily disturbed and moved into another area during the gather operation. With the exception of changes to herd demographics from removals, direct population impacts have proven to be temporary in nature with most, if not all, impacts disappearing within hours to several days of release. No observable effects associated with these impacts would be expected within one month of release, except for a heightened awareness of human presence.

It is not expected that genetic health would be impacted by the Proposed Action. The AML range of 60 – 100 on the Swasey HMA should provide for acceptable genetic diversity.

By maintaining wild horse population size near or above AML, there would be an acceptable density of wild horses across the HMA, reducing competition for resources and allowing wild horses to utilize their preferred habitat. Maintaining population size within the established AML would be expected to improve forage quantity and quality and promote healthy, self-sustaining populations of wild horses in a thriving natural ecological balance and multiple use relationship on the public lands in the area. Deterioration of the range associated with wild horse overpopulation would be avoided. Managing wild horse populations in balance with the available habitat and other multiple uses would lessen the potential for individual animals or the herd to be affected by drought, and would avoid or minimize the need for emergency gathers, which would reduce stress to the animals and increase the success of these herds over the long-term.

The wild horses that are gathered would be subject to one or more of the following outcomes listed below.

Temporary Holding Facilities During Gathers

Wild horses gathered would be transported from trap sites to a temporary holding corral near the HMA in goose-neck trailers or straight-deck semi-tractor trailers. At the temporary holding corral, the wild horses will be aged and sorted into different pens based on sex. The horses will be provided ample supply of good quality hay and water. Mares and their un-weaned foals will be kept in pens together. All horses identified for retention in the HMA will be penned separately from those animals identified for removal as excess. All mares identified for release will be treated with fertility control vaccine in accordance with the SOPs for Fertility Control Implementation in Appendix 6.

Transport, Short Term Holding, and Adoption (or Sale) Preparation

Wild horses removed from the range will be transported to the receiving short-term holding facility in a straight deck semi-trailers or goose-neck stock trailers. Vehicles will be inspected prior to use to ensure wild horses can be safely transported and that the interior of the vehicle is in a sanitary condition. Wild horses are segregated by age and sex and loaded into separate compartments. A small number of mares may be shipped with foals. Mares and un-weaned foals are not separated longer than 12 hours. Transportation of recently captured wild horses is limited to a maximum of 8 hours. During transport, potential impacts to individual horses can include stress, as well as slipping, falling, kicking, biting, or being stepped on by another animal. Unless wild horses are in extremely poor condition, it is rare for an animal to be seriously injured or die during transport.

Upon arrival at the short term holding facility, recently captured wild horses are off-loaded by compartment and placed in holding pens where they are fed good quality hay and water. Most wild horses begin to eat and drink immediately and adjust rapidly to their new situation. At the short-term holding facility, a veterinarian examines each load of horses and provides recommendations to the BLM regarding care, treatment, and if necessary, euthanasia of the recently captured wild horses. Any animals affected by a chronic or incurable disease, injury, lameness or serious physical defect (such as severe tooth loss or wear, club feet, and other severe congenital abnormalities) would be humanely euthanized using methods acceptable to the American Veterinary Medical Association (AVMA). Wild horses in very thin condition or animals with injuries are sorted and placed in hospital pens, fed separately and/or treated for their injuries as indicated. Recently captured wild horses, generally mares, in very thin condition may have difficulty transitioning to feed. Some of these animals are in such poor condition that it is unlikely they would have survived if left on the range. Similarly, some mares may lose their pregnancies. Every effort is taken to help the mare make a quiet, low stress transition to captivity and domestic feed to minimize the risk of miscarriage or death.

After recently captured wild horses have transitioned to their new environment, they are prepared for adoption or sale. Preparation involves freeze-marking the animals with a unique identification number, drawing a blood sample to test for equine infections anemia, vaccination against common diseases, castration, and de-worming. During the preparation process, potential impacts to wild horses are similar to those that can occur during handling and transportation. Serious injuries and deaths from injuries during the preparation process are rare, but can occur.

At short-term corral facilities, a minimum of 700 square feet is provided per animal. Mortality at short-term holding facilities averages approximately 5% per year (GAO-09-77, Page 51), and includes animals euthanized due to a pre-existing condition; animals in extremely poor condition; animals that are injured and would not recover; animals which are unable to transition to feed; and animals which are seriously injured or accidentally die during sorting, handling, or preparation.

Adoption

Adoption applicants are required to have at least a 400 square foot corral with panels that are at least six feet tall for horses over 18 months of age. Applicants are required to provide adequate shelter, feed, and water. The BLM retains title to the horse for one year and the horse and the facilities are inspected to assure the adopter is complying with the BLM's requirements. After one year, the adopter may take title to the horse, at which point the horse becomes the property of the adopter. Adoptions are conducted in accordance with 43 CFR 5750.

Sale with Limitation

Potential buyers must fill out an application and be pre-approved before they may buy a wild horse. A sale-eligible wild horse is any animal that is more than 10 years old; or has been offered unsuccessfully for adoption three times. The application also specifies that all buyers are not to re-sell the animal to slaughter buyers or anyone who would sell the animal to a commercial processing plant. Sales of wild horses are conducted in accordance with the 1971 WFRHBA and congressional limitations.

Long Term Pastures

Since fiscal year 2008, the BLM has removed over 37,400 excess wild horses from western rangelands. Most animals not immediately adopted or sold have been transported to long-term grassland pastures in the Midwest.

Potential impacts to wild horses from transport to adoption, sale or long-term grassland pastures (LTP) are similar to those previously described. One difference is that when shipping wild horses for adoption, sale or LTP, animals may be transported for a maximum of 24 hours. Immediately prior to transportation, and after every 18-24 hours of transportation, animals are offloaded and provided a minimum of 8 hours on-the-ground rest. During the rest period, each animal is provided access to unlimited amounts of clean water and 25 pounds of good quality hay per horse with adequate bunk space to allow all animals to eat at one time. Most animals are not shipped more than 18 hours before they are rested. The rest period may be waived in situations where the travel time exceeds the 24-hour limit by just a few hours and the stress of offloading and reloading is likely to be greater than the stress involved in the additional period of uninterrupted travel.

LTPs are designed to provide excess wild horses with humane, life-long care in a natural setting off the public rangelands. There wild horses are maintained in grassland pastures large enough to allow free-roaming behavior and with the forage, water, and shelter necessary to sustain them in good condition. As of February 2012, about 31,400 wild horses that are in excess of the current adoption or sale demand (because of age or other factors such as economic recession) are currently located on private land pastures in Iowa, Kansas, Oklahoma, and South Dakota. Establishment of LTPs was subject to a separate NEPA

and decision-making process. Located in mid or tall grass prairie regions of the United States, these LTPs are highly productive grasslands as compared to more arid western rangelands. These pastures comprise about 256,000 acres (an average of about 8-10 acres per animal).

Mares and sterilized stallions (geldings) are segregated into separate pastures except one facility where geldings and mares coexist. Although the animals are placed in LTPs, they remain available for adoption or sale to qualified individuals. No reproduction occurs in the long-term grassland pastures, but foals born to pregnant mares are gathered and weaned when they reach about 8-10 months of age and are then shipped to short-term facilities where they are made available adoption. The LTP contracts specify that wild horses receive the necessary care to ensure they remain healthy and well-cared for. Handling by humans is minimized to the extent possible although regular on-the-ground observation and weekly counts of the wild horses to ascertain their numbers, well-being, and safety are conducted. A very small percentage of the animals may be humanely euthanized if they are in very thin condition and are not expected to improve to a BCS of 3 or greater due to age or other factors. Natural mortality of wild horses in LTPs averages approximately 8% per year, but can be higher or lower depending on the average age of the horses pastured there (GAO-09-77, Page 52).

Euthanasia and Sale without Limitation

While euthanasia and sale without limitation has been limited by Congressional appropriations, it is allowed under the WFRHBA. Neither option is available for horses under the Department of the Interior's fiscal 2012 budgetary appropriations. Although the appropriations restrictions could be lifted in future appropriations bills, it would be contrary to Departmental policy to euthanize or sell without limitations healthy excess wild horses.

Wild Horses Remaining or Released into the HMA following Gather

Under the Proposed Action, the post-gather population of wild horses would be about 150 wild horses. Reducing the current population size and applying fertility control measures would allow for the remaining wild horses to thrive and not risk the threat of death or suffering from starvation due to insufficient habitat coupled with the effects of frequent drought (lack of forage and water).

Wild horses that are not captured may be temporarily disturbed and move into another area during the gather operations. With the exception of changes to herd demographics, direct population wide impacts have proven, over the last 20 years, to be temporary in nature with most if not all impacts disappearing within hours to several days of when wild horses are released back into the HMA. No observable effects associated with these impacts would be expected within one month of release, except for the heightened awareness of human presence.

As a result of a lowered density of wild horses across the HMA following the removal of excess horses, completion for resources would be reduced, allowing wild horses to utilize preferred, quality habitat. Confrontations between stallions would be also less frequent, as would fighting among wild horse bands at water sources.

The primary effects to the wild horse population that would be directly related to this proposed gather would be to herd population demographics, age structure or sex ratio, and subsequently to the growth rates and population size over time.

The remaining wild horses not captured would maintain their social structure and herd demographics (age and sex ratio). No observable effects to the remaining population associated with gather impacts would be expected except a heightened shyness toward human contact.

Impacts to rangelands as a result of the current overpopulation of wild horses would be reduced under the two gather removal alternatives. Fighting among studs would decrease since they would protect their position at water sources less frequently; injuries and death to all age classes of animals would also be expected to be reduced as competition for limited forage and water resources is decreased.

Gathering the wild horses during the fall/winter reduces risk of heat stress, although this can occur during any gather, especially in older or weaker animals. Adherence to the SOPs as well and techniques used by the gather contractor help minimize the risks of heat stress. Heat stress does not occur often, but if it does, death can result.

Impacts of Alternative 2 (Proposed Action)

Alternative 1 (Proposed Action) would gather up to 260 horses, of which 160 would be removed to return wild horse population size to near AML on the Swasey HMA. Up to 50 studs would be released along with approximately 50 treated mares back into the following the gather. Mares and studs would be selected for release to maintain a diverse age structure, herd characteristics, and conformation (body type).

Fertility control would be applied to all the released mares to decrease the future annual population growth. The procedures to be followed for the implementation of fertility control are detailed in Appendix 6. Each released mare would receive a single dose of the two-year Porcine Zona Pellucida (PZP-22) or similar contraceptive vaccine. When injected, PZP (antigen) causes the mare's immune system to produce antibodies and these antibodies bind to the mare's eggs, and effectively block sperm binding and fertilization (Zoo, Montana, 2000). PZP is relatively inexpensive, meets BLM requirements for safety to mares and environment, and can easily be administered in the field. In addition, among mares, PZP contraception appears to be completely reversible.

The highest success for fertility control has been obtained when applied during the timeframe of November through February. The efficacy for the application of the two-year PZP vaccine based on winter applications follows:

	Year 1	**Year 2**	**Year 3**	**Year 4**
Normal	94%	82%	68%	

One-time application at the capture site would not affect normal development of the fetus, hormone health of the mare or behavioral responses to stallions, should the mare already be pregnant when vaccinated (Kirkpatrick, 1995). The vaccine has also proven to have no apparent effect on pregnancies in progress, the health of offspring, or the behavior of treated mares (Turner, 1997). Mares would foal normally in 2013 (Year 1).

The injection would be controlled, handled, and administered by a trained BLM employees (SOPs. Appendix 6). Mares receiving the vaccine would experience slightly increased stress levels associated with handling while being vaccinated and freeze-marked. Serious injection site reactions associated with fertility control treatments are rare in treated mares. Any direct impacts associated with fertility control, such as swelling or local reactions at the injection site, would be minor in nature and of short duration. Most mares recover quickly once released back to the HMA, and none are expected to have long term consequences from the fertility control injections.

Ransom et al. (2010) found no differences in how PZP-treated and control mares allocated their time between feeding, resting, travel, maintenance, and social behaviors in three populations of wild horses, which is consistent with Powell's (1999) findings in another population. Likewise, body condition of PZP-treated and control mares did not differ between treatment groups in Ransom et al.'s (2010) study. Turner and Kirkpatrick (2002) found that PZP-treated mares had higher body condition than control

mares in another population, presumably because energy expenditure was reduced by the absence of pregnancy and lactation.

In two studies involving a total of four wild horse populations, both Nunez et al. (2009) and ransom et al. (2010) found PZP-treated mares were involved in reproductive interactions with stallions more often than control mares, which is not surprising given the evidence that PZP-treated females of other mammal species can regularly demonstrate estrus behavior while contracepted (Shumake and Wilhelm 1995, Heilmann et al. 1998, Curtis et al. 2002). Ransom et al. (2010) found that PZP-treated mares exhibited higher infidelity to their band stallion during the non-breeding season than control mares. Madosky et al. (in press) found this infidelity was also evident during the breeding season in the same population that Nunez et al. (2009) studied, resulting in PZP-treated mare changing bands more frequently than control mares. Long-term implications of these changes in social behavior are currently unknown.

Water/Bait Trapping (if used)
Bait and/or water trapping generally require a long window of time for success. Although the trap would be set in a high probability area for capturing excess wild horses residing within the area and at the most effective time periods, time is required for the horses to acclimate to the trap and/or decide to access the water/bait.

Trapping involves setting up portable panels around an existing water source or in an active wild horse area, or around a pre-set water or bait source. The portable panels would be set up to allow wild horses to go freely in an out of the corral until they have adjusted to it. When the wild horses fully adapt to the corral, it is fitted with a gate system. The acclimatization of the horses creates a low stress trap. During this acclimation period the horses would experience some stress due to the panels being set up and perceived access restriction to the water/bait source.

When actively trapping wild horses, the trap would be checked or manned on a daily basis. Horses would either be removed immediately or fed and watered for up to several days prior to transport to a holding facility. Existing roads would be used to access the trap sites.

Gathering of the excess horses utilizing bait/water trapping could occur at any time of the year and would extend until the target number of animals are removed to relieve concentrated use by horses in the area, reach AML, to implement population control measures, and to remove animals residing outside HMA boundaries. Generally, bait/water trapping is most effective when a specific resource is limited, such as water during the summer months. For example, in some areas, a group of wild horses may congregate at a given watering source during the summer because few perennial water resources are available nearby. Under those circumstances, water trapping could be a useful means of reducing the number of horses at a given location, which can also relieve the resource pressure caused by too many horses. As the proposed bait and/or water trapping in this area is a low stress approach to gathering of wild horses, such trapping can continue into the foaling season without harming the mares and foals. Conversely, it has been documented that at times water trapping could be stressful to wild animals due to their reluctance related to approaching new, human structures or intrusions. In these situations, wild horses may avoid watering or may travel greater distances in search of other watering sources.

Impacts of Alternative 3
Implementation of Alternative 3 would result in capturing fewer wild horses than would be captured in Alternative 2. A gate cut removal would be implemented rather than a selective removal (i.e., the gather would end when the number of excess wild horses which requires removal has been captured). Alternative 3 would not involve fertility control; mares would not undergo the additional stress of receiving fertility control injections or freeze-marking and would foal at normal rates until the next gather is conducted. The post-gather sex ratio would be about 40:60 mares to studs. Smaller bachelor bands

would be expected, with similar reproduction rates as currently being experienced within the herd, and individual mares would likely begin actively producing at a slightly older age.

4.3 Cumulative Effects for All Alternatives

The NEPA regulations define cumulative impacts as impacts on the environment that result from the incremental impact of the Proposed Action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such actions (40 CFR 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The cumulative impacts study area (CSA) for the purposes of evaluating cumulative impacts is the Swasey HMA.

According to the 1994 BLM *Guidelines for Assessing and Documenting Cumulative Impacts*, the cumulative analysis should be focused on those issues and resource values identified during scoping that are of major importance. Accordingly, the issues of major importance to be analyzed are maintaining rangeland health and maintaining appropriate management level.

Past and Present Actions

The Past, Present, and Reasonably Foreseeable Future actions applicable to the assessment area ar identified as the following:

Table 7: Cumulative Impact Analysis

Project – Name/Description	**Status**		
	Past	**Present**	**Future**
Wild Free-Roaming Horse and Burro Act of 1971	X		
Wild Horse and Burro issues and issuance of Multiple Use decisions	X	X	X
Swasey HMA Gather and Removals	X	X	X
Historic Livestock Grazing (1870 to 1934)	X		
Taylor Grazing Act	X		
Livestock Grazing Permit Renewals and Authorizations (Antelope, Sand Pass, Swasey Knolls, and Tatow Allotments)	X	X	X
Wildlife Management	X	X	X
Forestry (woodcutting through commercial and incidental means)	X	X	X
Recreation	X	X	X
Energy Development (Powerlines, Pipelines, Wind Energy, etc.)	X		X
Range Improvements (Water developments, fences, seedings, etc.)	X	X	X
Land Use Plans (House Range Resource Area RMP and future land use plans)	X		X

Any future proposed projects within the Swasey HMA would be analyzed in an appropriate environmental document following site specific planning. Future project planning would also include public involvement.

Past actions include establishment of wild horse Herd Management Areas, wild horse areas, establishment of AML for wild horses, wild horse gathers, energy development, livestock grazing and recreational activities throughout the area. Some of these activities have increased infestations of invasive plants, noxious weeds, and pests and their associated treatments.

4.3.1 Wild Horses

In 1971, Congress passed the WFRHBA which placed wild and free-roaming horses that were not claimed for individual ownership, under the protection of the secretaries of the Interior and Agriculture. The act provided protection, but no appropriation for the management of wild horses. In 1976, the FLPMA gave the BLM the authority to use motorized equipment in the capture of wild free-roaming horses as well as continued authority to inventory the public lands. In 1978, the PRIA was passed which gave the BLM a direction for management as well as approved appropriation authority for management of wild free-roaming horses on public lands.

The House Range Resource Area RMP/ROD Rangeland Program Summary, 1987 designated the Swasey HMA for the long-term management of wild horses. The HMA established in 1976 and identified in the "West Desert Wild Horse Capture Plan" (1977) are nearly identical in size and shape to the original herd areas identified in 1971 Management of wild horses within the HMAs today are guided by the House Range Resource Area RMP, 1987. AML was established as a population range of 60 – 100 on the Swasey HMA in1987 through issuance of the House Range Resource Area ROD.

The Fillmore Field Office has records of eight (8) wild horse gathers and removals that have occurred since 1971 within the Swasey HMA, resulting in the removal of approximately 748 wild horses from the area. The average population increase in the Swasey HMA has been between 16-20% annually.

Public interest in the welfare and management of wild horses continues to be very high. There are many different values pertaining to wild horse management from the public's perceptions. Some view wild horses as nuisance animals, while others strongly advocate management of wild horses as living symbols of the pioneer spirit.

4.3.2 Rangeland Health/Vegetation/Livestock Grazing

Through previous decisions, the BLM has allocated the available forage to wild horses, wildlife and domestic livestock. Other decisions have resulted in adjustments to livestock numbers and seasons of use and for implementation of grazing systems and the associated range improvements to promote rangeland health.

While the present livestock grazing system and efforts to manage the wild horse population within AML has reduced past historic impacts, the current overpopulation of wild horses is continuing to contribute to areas of heavy vegetation utilization, trailing and trampling damage and is preventing the BLM from managing for rangeland health and a thriving natural ecological balance and multiple use relationship on the public lands in the area. Rangeland Health Assessments have been conducted within the Swasey HMA for the associated livestock grazing allotments. Portions of the HMA have been monitored over the past several years due to problems with drought, vegetation condition and the combined use of wild horses and domestic livestock. Adjustments have been made from these evaluations to the permitted use by livestock by way of season of use, livestock numbers, and grazing systems through the allotment evaluation and permit renewal processes.

The Proposed Action analyzed in this EA would result in the reduction in competition between wild horses and other users (i.e. native wildlife and domestic livestock) for the limited available forage and water resources. Direct improvements in soils and riparian condition would be expected in the short term and result in fewer multiple-use conflicts within and adjacent to the Swasey HMA.

Over the long-term, improving the range would further benefit all users and the resources they depend on for forage and water.

Under the No Action (no removal) alternative, the current population of wild horses would not be reduced through the completion of a gather this year. Competition among wild horses, native wildlife and

domestic livestock for limited resources would increase, and riparian conditions would continue to deteriorate. Over the long-term, the health of wild horses and native wildlife would be expected to suffer as rangeland productivity further declines.

4.3.3 Recreation/Forestry

Common recreational activities in the HMA include occasional ATV riding, hiking, camping, hunting wildlife and wild horse viewing. Cumulative impacts are not likely to impact these recreational activities. Improved wildlife habitat as a result in the removal of excess wild horses within the HMA may lead to greater opportunity for viewing or hunting wildlife. Wild horse viewing may be reduced due to decreased concentrations of wild horses in areas accessible to the public.

Vegetation manipulation through wood cutting occurred commercially in the early 1900's within the area known as Sawmill Basin. An active sawmill was established and operated during this time to harvest the large stands of fir trees for lumber to be used in homes in the communities in and around Delta, Utah. Recreational and incidental wood cutting for fire wood occurred and continues to occur from the various recreational activities within the area.

4.3.4 Wildlife

Historic grazing (wildlife and wild horses) has resulted in decreased habitat values for wildlife within the Swasey HMA. In areas where the native understory vegetation has been depleted or vegetation disturbance has occurred cheatgrass has increased. Invasive species such as annual cheatgrass deplete the quality of the habitat to meet wildlife needs.

Direct impacts are expected to be minimal as a result of the Swasey gather. Removal of excess wild horses would reduce competition between big game species and wild horses. Direct competition between wild horses, big game, upland game and the various other wildlife species would continue to occur for perennial grasses, forbs water and space.

4.4 Reasonably Foreseeable Future Actions

4.4.1 Wild Horses

In the future, the BLM FFO would continue to inventory wild horse populations within the established Swasey HMA. Wild horses would continue to be an integral component of public lands, managed within a multiple-use concept within HMAs.

Population data collected during the Proposed Action would enable Wild Horse Specialists to monitor the herds and make management decisions to maintain genetic diversity within the Swasey HMA with historical or desirable herd characteristics and population demographics. Future removals within the Swasey HMA would utilize this information and provide baseline data for future NEPA analysis.

Over the next 10-20 year period, reasonably foreseeable future actions include gathers about every 4 - 6 years to remove excess wild horses in order to manage population size near the established AML range. Small selective management removals could be conducted through water trapping and other methods to maintain the AML within the HMAs reducing the need for large gathers thus reducing the amount of stress experienced by the wild horses. The excess animals removed would be transported to short-term corral facilities where they would be prepared for adoption, sale (with limitations), or long-term holding. A Herd Management Area Plan could also be completed which would establish short and long-term management and monitoring objectives for the herd and its habitat. Any future wild horse management would be analyzed in appropriate environmental documents following site-specific planning with public involvement.

Other reasonably foreseeable future actions include the transport, handling, care, and disposition of the excess wild horses removed from the range. Initially wild horses would be transported from the capture/temporary holding corrals to a designated BLM short-term holding corral facility. From there, the animals would be made available for adoption or sale to individuals who can provide a good home, or to long-term pastures in the Midwest.

The removal area contains a variety of resources and supports a varied of uses. Any alternative course of wild horse management has the opportunity to affect and be affected by other authorized activities ongoing in and adjacent to the area. Future activities which would be expected to contribute to the cumulative impacts of implementing the Proposed Action include: future wild horse gathers, continuing livestock grazing in allotments within the area, development of range improvements, continued development of mineral extraction, oil and gas exploration, new or continuing infestations of invasive plants, noxious weeds, and pests and their associated treatments, and continued native wildlife populations and recreational activities historically associated with them. The significance of cumulative effects based on past, present, and reasonably foreseeable future actions are determined based on context and intensity.

4.4.2 Rangeland Health/Vegetation/Livestock Grazing

Livestock grazing is expected to continue at similar stocking rates and utilization of the available vegetation (forage) would also be expected to continue at similar levels. Continuing to graze livestock in a manner consistent with grazing permit terms and conditions would be expected to achieve or make significant progress towards achieving Rangeland Health Standards.

Production, frequency, utilization, and trend data would continue to be collected for future rangeland management actions, Rangeland Health Assessments for allotments associated with this area would be completed again within the next 10 years.

In the future, permit renewals and livestock grazing evaluations would be completed on the Antelope, Sand Pass, Swasey Knoll, and Tatow Allotments on a ten year cycle. Changes to the permitted livestock use on each of these would be made at that time. Issuance of grazing permits would be completed through appropriate NEPA analysis.

Range improvement projects may be proposed in the future. Water developments and fences aid in livestock distribution. Water developments would provide additional water sources to wild horses. Construction offences within the Swasey HMA could inhibit the free-roaming nature of wild horses. All future range improvement projects would be analyzed through site specific NEPA analysis within a multiple-use concept.

Future actions that would affect vegetation in within the Swasey HMA area that are currently being developed and employed in surrounding areas within the Fillmore Field Office include the development of wind farms, pipelines, and the power transmission lines. The loss of vegetation and water with the development of these activities would adversely affect the wild horse and native wildlife populations in the long-term through the loss of habitat.

4.4.3 Wildlife

Past, present and future projects with regards to properly planned vegetation and wildlife habitat improvement, invasive weed treatments, and range improvements are beneficial for wildlife. These projects generally ensure the quality of habitat and forage for wildlife species.

Direct competition between wild horses, big game and other wildlife will continue to occur for perennial grasses, forbs, water and space.

Wild horse populations have and would continue to influence the available forage for wildlife. As wild horse populations increase the competition between wildlife and wild horses for limited resources would increase. As wild horses and wildlife are managed within the population goals and appropriate management levels (AML) this competition would be reduced.

Abundance of small bird, mammal and reptile populations could be reduced because of habitat alteration. Wild horses can reduce vegetation cover required to support adequate prey populations for raptor species.

4.5 Summary of Past, Present, and Reasonably Foreseeable Future Actions

Impacts Common to Action Alternatives (2-3)

The cumulative effects associated with the capture and removal of excess wild horses includes gather-related mortality of less than 1% of the captured animals, about 5% per year associated with transportation, short term holding, adoption or sale with limitations and about 8% per year associated with long-term holding. This compares with natural mortality on the range ranging from about 5-8% per year for foals (animals under age 1), about 5% per year for horses ages 1-15, and 5-100% for animals age 16 and older (Stephen Jenkins, 1996, Garrott and Taylor, 1990). In situations where forage and/or water are limited, mortality rates increase, with the greatest impact to young foals, nursing mares and older horses. Animals can experience lameness associated with trailing to/from water and forage, foals may be orphaned (left behind) if they cannot keep up with their mare, or animals may become too weak to travel. After suffering, often for an extended period, the animals may die. Before these conditions arise, the BLM generally removes the excess animals to prevent their suffering from dehydration or starvation.

While humane euthanasia and sale without limitation of healthy horses for which there is no adoption demand is authorized under the WFRHBA, Congress prohibited the use of appropriated funds between 1987 and 2004 and again in 2010 for this purpose. It is unknown if a similar limitation will be placed on the use of FY2011 appropriated funds.

The other cumulative effects which would be expected when incrementally adding either of the Action Alternatives to the CSA would include continued improvement of upland vegetation conditions, which would in turn benefit permitted livestock, native wildlife, and wild horse population as forage (habitat) quality and quantity is improved over the current level. Benefits from a reduced wild horse population would include fewer animals competing for limited forage and water resources. Cumulatively, there should be more stable wild horse populations, healthier rangelands, healthier wild horses, and fewer multiple use conflicts in the area over the short and long-term. Over the next 15-20 years, continuing to manage wild horses within the established AML range would achieve a thriving natural ecological balance and multiple use relationship on public lands in the area.

Impacts of Alternative 1 (No Action) No Gather and Removal

Under the No Action Alternative, the wild horse population within the Swasey HMA could exceed 721 in four years. Movement outside the HMAs would be expected as greater numbers of horses search for food and water for survival, thus impacting larger areas of public lands. Heavy to excessive utilization of the available forage would be expected and the water available for use could become increasingly limited. Eventually, ecological plant communities would be damaged to the extent that they are no longer sustainable and the wild horse population would be expected to crash.

Impacts of Alternative 2 (Proposed Action) Gather, Removal and Fertility Control Treatment

Cumulative effects expected when incrementally adding any of the action alternatives to the area of potential effect would include continued upland vegetation conditions, which would in turn benefit permitted livestock, native wildlife, and wild horse population as forage (habitat) quality and quantity is

improved over the current level. Application of fertility control and/or adjustments in sex ratios to favor males should slow population growth and result in fewer gathers and less frequent disturbance to individual wild horses and the herd's social structure. However, return of wild horses back into the HMA could lead to decreased ability to effectively gather horses in the future as released horses learn to evade the helicopter.

Emergency removals could be expected in order to prevent individual animals from suffering or death as a result of insufficient forage and water. These emergency removals could occur as early as 2011 with the current population levels and expected growth. During emergency conditions, competition for the available forage and water increases. This competition generally impacts the oldest and youngest horses as well as lactating mares first. These groups would experience substantial weight loss and diminished health, which could lead to their prolonged suffering and eventual death. If emergency actions are not taken, the overall population could be affected by severely skewed sex ratios towards stallions as they are generally the strongest and healthiest portion of the population. An altered age structure would also be expected.

Cumulatively, there should be a more stable wild horse population, less competition for limited forage and water resources, healthier rangelands and wild horses, and fewer multiple use conflicts in the area over the short and long-term. Over the next 10-20 years, continuing to manage wild horses within the established AML range would achieve a thriving natural ecological balance and multiple use relationship on public lands in the area.

Alternative 3: Gather without Fertility Control Treatment
Impacts from this alternative would be similar to the Proposed Action

5.0 Monitoring and Mitigation Measures

The BLM Wild Horse Specialist assigned as lead for the gather would be responsible for ensuring all personnel abide by the SOPs (Appendix A). Ongoing monitoring of forage condition and utilization, water availability, aerial population surveys, and animal health would continue.

Fertility control monitoring would be conducted in accordance with the SOPs (Appendix B). Monitoring the herd's social behavior would be incorporated into routing monitoring. The objective of this additional monitoring would be to determine if additional studs form bachelor bands or are more aggressive with breeding bands for the forage and water present.

6.0 List of Preparers

The following list identifies the interdisciplinary team member's area of responsibility:

Name	Title	Area of Responsibility
Eric Reid	Wild Horse Specialist	Project Lead/Wild Horses
Mace Crane	Wildlife Biologist	Wildlife, Migratory Birds, Special Status Species
Paul Caso	Range Management Specialist	NEPA, Floodplains, Air Quality, Water Quality
Russel Tanner	Archeologist	Cultural Resources, Native American Religious Concerns
Steve Bonar	Recreation Specialist	Wilderness, Visual Resources, Wild and Scenic Rivers
Paul Caso	Range Management Specialist	Livestock Grazing, Standards for Rangeland Health
Bill Thompson	Range Management Specialist	Soil, Riparian/Wetlands, Farmlands (Prime or Unique)
RB Probert	Weed Specialist	Invasive Species/Noxious Weeds
David Whitaker	Range Management Specialist	Vegetation, Special Status Species

7.0 Consultation and Coordination

The Utah State Office initiated public involvement at a public hearing about the use of helicopters and motorized vehicles to capture and transport wild horses (or burros) on July 13, 2012 at the BLM's Fillmore Field Office in Fillmore Utah. This specific gather was addressed at the public meeting as well as other gathers that may occur within the state of Utah over approximately the next 12 months. This meeting was advertised in papers and radio stations statewide. The meeting was attended by one member of the public who submitted hers and another person's comments at the meeting. In addition, the Utah State Office received one comment via email on the "Use of Helicopters, Motorized Vehicles" approximately a week after the public hearing. BLM reviewed its Standard Operating Procedures in response to the views and issues expressed at the hearing and determined that no changes to the SOPs were warranted.

8.0 Public Involvement

The Utah State Office initiated public involvement at a public hearing about the use of helicopters and motorized vehicles to capture and transport wild horses (or burros) on July 13, 2012 at the BLM's Fillmore Field Office in Fillmore Utah. This specific gather was addressed at the public meeting as well as other gathers that may occur within the state of Utah over approximately the next 12 months. This meeting was advertised in papers and radio stations statewide. The meeting was attended by one member of the public who submitted hers and another person's comments at the meeting. In addition, the Utah State Office received one comment via email on the "Use of Helicopters, Motorized Vehicles" approximately a week after the public hearing. BLM reviewed its Standard Operating Procedures in response to the views and issues expressed at the hearing and determined that no changes to the SOPs were warranted. However, as most of the comments received are directed more toward the policies and regulations that are used to manage wild horses and burros. These comments were shared with the National Program Office for Wild Horses and Burros.

Additional public involvement includes the posting of this action on the Utah BLM Environmental Bulletin Board (ENBB) August 29, 2012. A preliminary Swasey HMA Gather Plan is available to the public at the Fillmore field Office, or on line at http://www.blm.gov/ut/st/en/prog/wild_horse_and_burro.html or http:www.blm.gov/ut/enbb/ for a 30-day review and comment period beginning November 1, 2012 and ending November 30, 2012. The comments received during this period will be summarized and addressed in Appendix 11.

9.0 List of References

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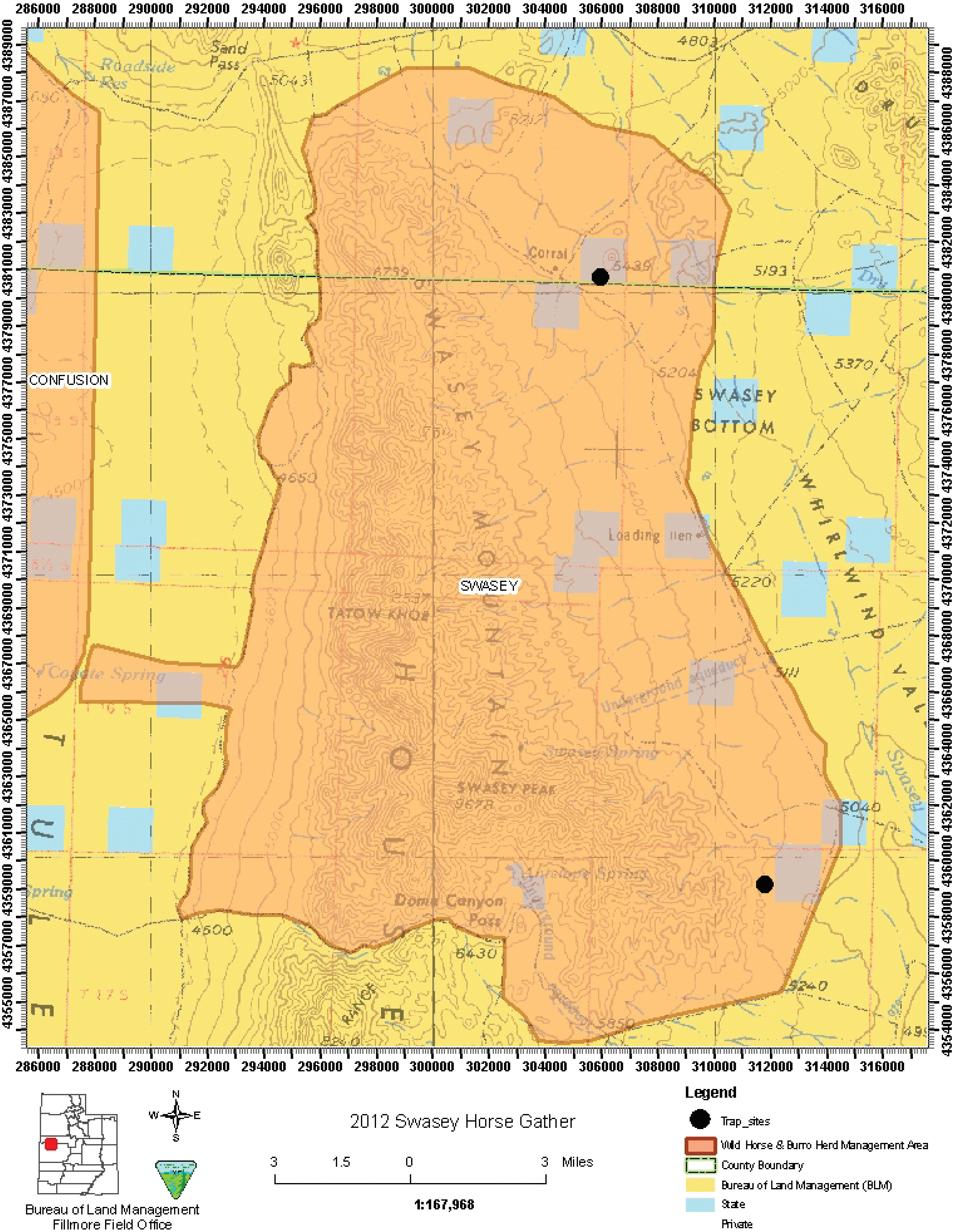
10.0 Appendices

Appendix 1 - Interdisciplinary Team NEPA Checklist and Specialist Information (Internal and External)
Appendix 2 - Fundamentals of Rangeland Health
Appendix 3 - Utah Standards for Rangeland Health (1997)

Appendix 4 - Utah Guidelines for Grazing Management
Appendix 5 - Standard Operating Procedures (Gather Operation)
Appendix 6 - Standard Operating Procedures (Fertility Control Application and Monitoring)
Appendix 7 - Standard Operating Procedures (Field Castration [Gelding] of Wild Horse Stallions)
Appendix 8 - Win Equus Population Modeling Results
Appendix 9 - Scheduled Observation Day Protocol and Ground Rules
Appendix 10 - Summary of Comments Received during Public Scoping and BLM Responses


2012 Swasey Horse Gather
CONFUSION
SWASEY
SWASEY BOTTOM
SWASEY PEAK
TATOW KNOB
Dome Canyon Pass
Swasey Spring
Antelope Spring
Coyote Spring
Sand Pass
Roadside Res
Corral
Loading Pen
Underground aqueduct
Legend
Trap_sites
Wild Horse & Burro Herd Management Area
County Boundary
Bureau of Land Management (BLM)
State
Private
3 1.5 0 3 Miles
1:167,968
Bureau of Land Management
Fillmore Field Office

Appendix 1

INTERDISCIPLINARY TEAM CHECKLIST

Project Title: Swasey HMA Wild Horse Gather Plan

NEPA Log Number: DOI-BLM-UT-W020-2012-0024-EA

File/Serial Number:

Project Leader: Eric Reid

DETERMINATION OF STAFF: ***(Choose one of the following abbreviated options for the left column)***

NP = not present in the area impacted by the proposed or alternative actions
NI = present, but not affected to a degree that detailed analysis is required
PI = present with potential for relevant impact that need to be analyzed in detail in the EA
NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section D of the DNA form. The Rationale column may include NI and NP discussions.

PROJECT DESCRIPTION

The Bureau of Land Management (BLM) proposes to gather approximately 250 wild horses and remove 225 wild horses from the Swasey Herd Management Area (HMA) in October 2012.

Determi-nation	Resource	Rationale for Determination*	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
NI	Air Quality	The proposed action would have no effect on air quality.	/s/ Paul Caso	5/15/12
NI	Areas of Critical Environmental Concern	There are no ACEC's in the proposed project area.	/s/SBonar	6-05-07
NP	BLM Natural Areas	There are no BLM Natural areas within the project area.	/s/SBonar	5/15/12
NI	Cultural Resources	Only previously inventoried trap sites will be used.	/s/Russel Tanner	9/4/2012
NI	Greenhouse Gas Emissions	The proposed action would have a negligible, short-term effect on greenhouse gas emissions.	/s/ Paul Caso	5/15/12
NI	Environmental Justice	There are no minority or low income populations within the affected area of the proposed action.	/s/ Michael Gates	10/30/12
NP	Farmlands (Prime or Unique)	There are no prime or unique farmlands that would be affected by the proposed action	/s/ Paul Caso	5/15/12
NI	Fish and Wildlife Excluding USFW Designated Species	The proposed action will have positive benefits on big game, upland game birds, non-game neo-tropical migratory birds, raptors and various other wildlife species, including mule deer, antelope, mountain lion, coyote, rattle snakes, lizards and jack rabbits which may occur within the scope of the proposed action. Managing herd numbers will benefit wildlife overall by reducing competition and improving range condition.	Mace Crane	5/14/12
NP	Floodplains	There are no floodplains that may be adversely impacted by the proposed action.	/s/ Paul Caso	5/15/12
NP	Fuels/Fire Management	The proposed action will have no significant effect on with in fuels and fire management.	/s/ Fritz Mueller	5/17/12

Determi-nation	Resource	Rationale for Determination*	Signature	Date
NI	Geology / Mineral Resources/Energy Production	There no current mineral activities in the area. Any impacts form this activity to mineral activities are temporary and would be passed prior to any authorization of future mineral activity	J Mansfield	10/30/12
NI	Hydrologic Conditions	This proposal action will not adversely directly or indirectly impact hydrologic conditions in the project area or result in any cumulative effects on hydrologic conditions within or outside the project area.	/s/ Paul Caso	5/15/12
NI	Invasive Species/Noxious Weeds	There are no known noxious weeds located in the proposed trap/gather area. To prevent the introduction of new species equipment should be cleaned prior to entering the project area.	/s/R.B. Probert	10/9/12
NI	Lands/Access	The project, as described, would not affect access to the public lands.	/s/ Teresa Frampton	5/14/12
PI	Livestock Grazing	The removal of excess horses would reduce competition for available forage resources.	/s/ Paul Caso	9/11/12
NI	Migratory Birds.	Given the low magnitude and short duration of the proposed action, no impacts to migratory birds are anticipated. Migratory birds may benefit from the reduction of herd numbers.	Mace Crane	5/14/12
NI	Native American Religious Concerns	Consultation was conducted between BLM and the Hopi Tribe, Skull Valley Gosiute Tribe, Kanosh Band of Paiutes, the Paiute Tribe of Utah, the Ute Indian Tribe, the Gosiute Tribe, The Navajo Tribe, and the Kaibab Band of Paiute Indians. The Goshute Tribe concurred but no other tribes offered comments on BLMs no adverse effect determination.	/s/ Russel L. Tanner	10/15/2012
NI	Paleontology	There are no known scientifically significant paleontological resources that would be impacted by this activity; there would be no impact to those resources in any case.	J Mansfield	10/30/12
PI	Rangeland Health Standards	Removal of excess horses would contribute to the improvement of rangeland health.	/s/ Paul Caso	9/11/12
NI	Recreation	There will be no impacts to casual recreation use in the gather area.	/s/SBonar	5/15/12
NI	Socio-Economics	This is not the type of project that has a noticeable impact on socio-economics in Juab or Millard Counties.	/s/ Michael Gates	10/30/12
PI	Soils	The removal of excess horses would contribute to the maintenance of sufficient vegetation and litter to protect soil from erosion.	/s/ Paul Caso	5/15/12
NP	Threatened, Endangered or Candidate Plant Species	There are still no known federally-listed plant species within the proposed wild horse gather operation.	David Whitaker	10/30/12
NP	Threatened, Endangered or Candidate Animal Species	There are no Threatened, Endangered, or Candidate animal species present in the project area. Project is outside of known T&E Species distributions in Millard and Juab County.	Mace Crane	5/14/12
NP	Wastes (hazardous or solid)	All waste must be removed and All hazardous materials used or produced must be reported to the FFO. They must be removed and disposed in an appropriately permitted disposal facility	J Mansfield	10/30/12
NI	Water Resources/Quality (drinking/surface/ground)	There would be no impacts to water resources/quality.	/s/ Paul Caso	5/15/12
NI	Wetlands/Riparian Zones	Removal of wild horses from this area would not affect riparian areas or wetlands other than to reduce the number of horses watering at them. This may benefit riparian vegetation	/s/ Bill Thompson	5/14/2012

/s/SBonar

Determi-nation	Resource	Rationale for Determination*	Signature	Date
		if sufficient numbers area removed to allow for reduced use of riparian vegetation.		
NP	Wild and Scenic Rivers	There are no Wild & Scenic Rivers identified by PL 111.11 within the FFO.	/s/SBonar	5/15/12
NI	Wilderness/WSA	If current protocol for gathers are followed, there will be no impacts to the Swasey WSA. There will be a monitor assigned to this project.	/s/SBonar	5/15/12
NI	Woodland / Forestry	No Impacts anticipated to forestry.	/s/ Michael Gates	10/30/12
NI	Vegetation Excluding USFW Designated Species	As in the previous analysis, there are no anticipated negative impacts to range vegetation from the proposed Confusion horse gather. Very little ground disturbance is proposed. In addition, no special status plant species are known in the areas of the proposed trap sites.	/s/ Michael Gates	10/30/12
NI	Visual Resources	There will be no impacts to the VRM Classification due to the gather.	/s/Sbonar	5/15/12
PI	Wild Horses and Burros	The removal of the 162 excess horses from the Swasey HMA will bring the population within the established AML and allow for healthy rangelands, viable herds and long term sustainability.	Eric Reid	5/14/2012
NI	Areas with Wilderness Characteristics	There will be no impacts to wilderness characteristics if gather protocols are followed. There will be a monitor assigned to this project.	/s/Sbonar	5/15/12

FINAL REVIEW:

Reviewer Title	Signature	Date	Comments
Environmental Coordinator			
Authorized Officer			

Appendix 2.
Fundamentals of Rangeland Health

The Fundamentals of Rangeland Health stated in 43 CFR 4180 are:

1. Watersheds are in, or are making significant progress toward, properly functioning physical condition, including their upland, riparian-wetland, and aquatic components; soil and plant conditions support infiltration, soil moisture storage and the release of water that are in balance with climate and landform and maintain or improve water quality, water quantity and the timing and duration of flow.

2. Ecological processes, including the hydrologic cycle, nutrient cycle and energy flow, are maintained, or there is significant progress toward their attainment, in order to support healthy biotic populations and communities.

3. Water quality complies with State water quality standards and achieves, or is making significant progress toward achieving, established Bureau of Land Management objectives such as meeting wildlife needs.

4. Habitats are, or are making significant progress toward being, restored or maintained for Federal threatened and endangered species, Federal Proposed, Category 1 and 2 Federal candidate and other special status species.

The fundamentals of rangeland health combine the basic precepts of physical function and biological health with elements of law relating to water quality, and plant and animal populations and communities. They provide direction in the development and implementation of the standards for rangeland health.

Appendix 3.
Utah Standards for Rangeland Health (1997)

<u>Standard 1</u>. Upland soils exhibit permeability and infiltration rates that sustain or improve site productivity, considering the soil type, climate, and landform.

As indicated by:

a) Sufficient cover and litter to protect the soil surface from excessive water and wind erosion, promote infiltration, detain surface flow, and retard soil moisture loss by evaporation.

b) The absence of indicators of excessive erosion such as rills, soil pedestals, and actively eroding gullies.

c) The appropriate amount, type, and distribution of vegetation reflecting the presence of (1) the Desired Plant Community [DPC], where identified in a land use plan, or (2) where the DPC is not identified, a community that equally sustains the desired level of productivity and properly functioning ecological conditions.

<u>Standard 2.</u> Riparian and wetland areas are in properly functioning condition. Stream channel morphology and functions are appropriate to soil type, climate and landform.

As indicated by:

a) Streambank vegetation consisting of, or showing a trend toward, species with root masses capable of withstanding high streamflow events. Vegetative cover adequate to protect stream banks and dissipate streamflow energy associated with high-water flows, protect against accelerated erosion, capture sediment, and provide for groundwater recharge.

b) Vegetation reflecting: Desired Plant Community, maintenance of riparian and wetland soil moisture characteristics, diverse age structure and composition, high vigor, large woody debris when site potential allows, and providing food, cover and other habitat needs for dependent animal species.

c) Revegetating point bars; lateral stream movement associated with natural sinuosity; channel width, depth, pool frequency and roughness appropriate to landscape position.

d) Active floodplain.

<u>Standard 3.</u> Desired species, including native, threatened, endangered, and special-status species, are maintained at a level appropriate for the site and species involved.

As indicated by:

a) Frequency, diversity, density, age classes, and productivity of desired native species necessary to ensure reproductive capability and survival.

b) Habitats connected at a level to enhance species survival.

c) Native species reoccupy habitat niches and voids caused by disturbances unless management objectives call for introduction or maintenance of nonnative species.

d) Appropriate amount, type, and distribution of vegetation reflecting the presence of (1) the Desired Plant Community [DPC], where identified in a land use plan conforming to these Standards, or (2) where the DPC is identified a community that equally sustains the desired level of productivity and properly functioning ecological processes.

Standard 4. BLM will apply and comply with water quality standards established by the State of Utah (R.317-2) and the Federal Clean Water and Safe Drinking Water Acts. Activities on BLM Lands will support the designated beneficial uses described in the Utah Water Quality Standards (R.317-2) for surface and groundwater. [1]

As indicated by:

a) Measurement of nutrient loads, total dissolved solids, chemical constituents, fecal coliform, water temperature and other water quality parameters.

b) Macro-invertebrate communities that indicate water quality meets aquatic objectives.

[1] BLM will continue to coordinate monitoring water quality activities with other Federal, state and technical agencies.

Appendix 4.
Utah Guidelines for Grazing Management (1997)

1. Grazing management practices will be implemented that:

(a) Maintain sufficient residual vegetation and litter on both upland and riparian sites to protect the soil from wind and water erosion and support ecological functions;

(b) Promote attainment or maintenance of proper functioning condition riparian/wetland areas, appropriate stream channel morphology, desired soil permeability and infiltration, and appropriate soil conditions and kinds and amounts of plants and animals to support the hydrologic cycle, nutrient cycle and energy flow;

(c) Meet the physiological requirements of desired plants and facilitate reproduction and maintenance of desired plants to the extent natural conditions allow;

(d) Maintain viable and diverse populations of plants and animals appropriate for the site;

(e) Provide or improve, within the limits of site potentials, habitat for Threatened or Endangered Species;

(f) Avoid grazing management conflicts with other species that have the potential of becoming protected or special status species;

(g) Encourage innovation, experimentation and the ultimate development of alternatives to improve rangeland management practices;

(h) Give priority to rangeland improvement projects and land treatments that offer the best opportunity for achieving the Standards.

2. Any spring or seep developments will be designed and constructed to protect ecological process and functions and improve livestock, wild horse and wildlife distribution.

3. New rangeland projects for grazing will be constructed in a manner consistent with the Standards. Considering economic circumstances and site limitations, existing rangeland projects and facilities that conflict with the achievement or maintenance of the Standards will be relocated and/or modified.

4. Livestock salt blocks and other nutritional supplements will be located away from riparian/wetland areas or other permanently located, or other natural water sources. It is recommended that the locations of these supplements be moved every year.

5. The use and perpetuation of native species will be emphasized. However, when restoring or rehabilitating disturbed or degraded rangelands non-intrusive, non-native plant species are appropriate for use where native species (a) are not available, (b) are not economically feasible, cannot achieve ecological objectives
as well as nonnative species, and/or (d) cannot compete with already established native species.

6. When rangeland manipulations are necessary, the best management practices, including biological processes, fire and intensive grazing, will be utilized prior to the use of chemical or mechanical manipulations.

7. When establishing grazing practices and rangeland improvements, the quality of the outdoor recreation experience is to be considered. Aesthetic and scenic values, water, campsites and opportunities for solitude are among those considerations.

8. Feeding of hay and other harvested forage (which does not refer to miscellaneous salt, protein and other supplements) for the purpose of substituting for inadequate natural forage will not be conducted on BLM lands other than in (a) emergency situations where no other resource exists and animal survival is in jeopardy, or (b) situations where the Authorized Officer determines such a practice will assist in meeting a Standard or attaining a management objective.

9. In order to eliminate, minimize or limit the spread of noxious weeds, (a) only hay cubes, hay pellets or certified weed-free hay will be fed on BLM lands, and (b) reasonable adjustments in grazing methods, methods of transport and animal husbandry practices will be applied.

10. To avoid contamination of water sources and inadvertent damage to non-target species, aerial application of pesticides will not be allowed within 100 feet of a riparian/wetland area unless the product is registered for such use by the EPA.

11. On rangelands where a standard is not being met, and conditions are moving toward meeting the standard, grazing may be allowed to continue. On lands where a standard is not being met, conditions are not improving toward meeting the standard or other management objectives, and livestock grazing is deemed responsible, administrative action with regard to livestock will be taken by the Authorized Officer pursuant to CFR 4180.2(c).

12. Where it can be determined that more than one kind of grazing animal is responsible for failure to achieve a Standard, and adjustments in management are required, those adjustments will be made to each kind of animal, based on interagency cooperation as needed, in proportion to their degree of responsibility.

13. Rangelands that have been burned, seeded or otherwise treated to alter vegetative composition will be closed to livestock grazing as follows: (1) burned rangelands, whether by wildfire or prescribed burning, will not be grazed for a minimum of one complete growing season following the burn; and (2) rangelands that have been seeded or otherwise chemically or mechanically treated will not be grazed for a minimum of two complete growing seasons.

14. Conversions in kind of livestock (such as from sheep to cattle) will be analyzed in light of Rangeland Health Standards. Where such conversions are not adverse to achieving a Standard, or they are not in conflict with BLM land use plans, the conversion will be allowed.

Appendix 5.
Standard Operating Procedures for Conducting Wild Horse Gathers

(Methods for Humane Capture of Wild Horses from the Frisco HMA)
(FLPMA – 16 USC 1338a, Wild Horse and Burro Handbook – H-4710-1, 43 CFR 4700)

The gather method employed for this capture operation requires that horses be herded to a trap of portable panels and on extremely rare occasions to ropers who, after roping the animal, will bring it to the trap or have a trailer taken to the roped animal. Gathering would be conducted by using agency personnel or contractors experienced in the humane capture and handling of wild horses. The same rules apply whether a contractor or BLM personnel are used. The following stipulations and procedures will be followed during the contract period to ensure the welfare, safety and humane treatment of the wild horses in accordance with the provisions of 43 CFR 4700.

1. Capture Methods That May Be Used in the Performance of a Helicopter Gather

a. Helicopter Drive Trapping

This capture method will involve driving horses into a pre-constructed trap using a helicopter. The trap is constructed of portable steel panels consisting of round pipe. Wings are constructed off the ends of the panel trap to aid in funneling horses into the trap. The wings are constructed of natural jute, (or similar netting which will not injure a horse), which is hung on either trees or steel T-posts. This sort of wing forms a very effective visual barrier to the horses that they typically will not run through. When the trap is ready for use, a helicopter will start moving horses toward the trap and into the wings.

In heavily wooded areas, it may be necessary to use wranglers in support of the helicopter to move the horses. The helicopter will act more as a spotter for the ground crew in this situation.

The contractor/BLM shall attempt to keep bands intact except where animal health and safety become considerations which would prevent such procedures. The contractor/BLM shall ensure that foals shall not be left behind.

At least one saddle-horse should be immediately available at the trap site to perform roping if necessary. Roping shall be done as determined by the Contracting Officer's Technical Representative (COTR) or Project Inspector (PI). Under no circumstances shall animals be tied down for more than one hour.

Domestic saddle horses may also be used to assist the helicopter pilot (on the ground) during the gather operation, by having the domestic horse act as a pilot (or "Judas") horse on the ground, leading the wild horses into the trap site. Individual ground hazers and individuals on horseback may also be used to assist in the gather.

b. Helicopter Assisted Roping

Capture attempts may be accomplished by utilizing a helicopter to drive animals to ropers. Under no circumstances shall horses or burros be tied down for more than one hour.

Roping shall be performed in such a manner that bands will remain together. Foals shall not be left behind.

2. Other Non-Helicopter Capture Methods

a. Water Trapping

This method involves setting up a trap around a well used water source and employing a self-closing gate with a triggering device or finger gates. Finger gates can be used only with the prior approval and under the supervision of the COTR/PI. Water traps equipped with trip wires would be checked every 10 hours for trapped animals. Water traps may also be manually closed using a pull rope, which requires personal to be at the trap site to close the gate.

It may be necessary to exclude access to other neighboring water sources to encourage use by the target population at the trap site. All exclosures constructed for the purpose of the gather would be flagged and highly visible to the horses, wildlife, and the public. The wires, twine, and flagging would be promptly removed following completion of the trapping.

All water traps and exclosures would be constructed (whenever possible) to accommodate wildlife access points. These points would be where wildlife could get to water by going underneath the panels, such as along trails, washes or low spots.

Placement of portable corral panels would be permitted during foaling season to allow wild horses to become accustomed to them.

b. Bait Trapping

Bait trapping using hay or other enticements may be used as an additional or alternative method of capture. This method would involve setting up a panel trap in an area accessible to the horses and feeding of enticements in the trap over a period of time to habituate the target animal to the bait. Once virtually all horses (or burros) in an area were coming in to the bait, they would be trapped. The principal limitation of this method is that forage must be limited or the bait must be more desirable than the surrounding forage.

c. Net Gunning

The net-gunning aerial capture technique uses weighted nets to individually capture wild animals. Net gun capture is a valuable tool when specific animals are targeted for restraint, relocation or removal. The technique is not applicable when a large number of animals require capture.

When using nets, drug and electrical immobilization are rarely required. Individual animals are located, herded by the pilot as slowly as possible into an open area and then are netted from the helicopter using weighted, soft mesh net. As the horse or burro becomes tangled in the net they become somewhat disoriented and further slow down. Some animals come to a complete standstill when surrounded by the net. Others become tangled to the point where they roll onto the ground.

Immediately after netting an animal the crew members approach the animal. The horse or burro is rolled onto its side, cross-hobbled and blindfolded. A muzzle is used in cases where an animal acts aggressive. The net is then rolled away from the horse or burro and the animal can be handled for collection of biological samples. If transport is required, the hobbled, blindfolded animal is rolled into a soft canvas bag. The bag is laced closed with a strong nylon rope. The rope is attached to a hook on the belly of the helicopter and the animal is transported to the destination. Transport time to small, portable corrals is usually under 10 minutes per animal.

Once at the destination, the horse or burro is gently lowered into the small, portable corral. The ground crew unhooks the transport rope and removes the bag from around the animal. The blindfold and hobbles are removed. The horse or burro immediately gets onto their feet, appearing only slightly disoriented.

d. Chemical Capture

The chemical capture technique has similar benefits to the net gunning technique in the fact that individual animals may be captured. Chemical capture is a valuable tool when specific animals are targeted for restraint, relocation or removal. The technique is not applicable when a large number of animals require capture.

When using chemical capture a drug will be administer through the use of a dart gun and dart. The dart will be loaded with a chemical recommended by a veterinarian and approve by the BLM Authorized Officer on site. The dart is then shot out of a gun using the appropriate propellant for that gun. As the dart impacts the animal the chemical is released and the animal is subdued by the chemical. The use of this method is limited to within 100 yards or the range of the dart gun. The chemical can be administered from the ground or by air.

Once the animal is subdued by the chemical ground crews must imminently approach the animal and hobble or halter the animal. As the chemical wears off and the animal case once again move with normal function saddle horses may be used to move the animal where it can be loaded into a trailer. If the animal is already in a location where it can be loaded then the animal may be tied down for no longer then 1 hour and loaded directly into the trailer.

3. Stipulations for Portable Corral Traps/Exclosures

Capture traps would be constructed in a fashion to minimize the potential for injury to wild horses or burros and BLM/contractor personnel. Gates would be wired open at all unmanned trap sites, and would be left closed only when needed to hold horses or burros inside. Trapped horses or burros would not be held inside the traps for a period exceeding 10 hours, unless provided with feed (weed free hay) and water.

The Utah Division of Wildlife Resources would be notified as soon as possible if any wildlife became injured during capture operations. Wildlife caught inside traps would be released immediately.

4. Contract Helicopter, Pilot and Communications

The contractor must operate in compliance with Federal Aviation Regulations, Part 91. Pilots provided by the contractor shall comply with the Contractor's Federal Aviation Certificates, applicable regulations of the State in which the gather is located.

When refueling, the helicopter shall remain a distance of at least 1,000 feet or more from animals, vehicles (other than fuel truck), and personnel not involved in refueling.

The COTR/PI shall have the means to communicate with the contractor's pilot at all times. If communications cannot be established, the Government will take steps as necessary to protect the welfare of the animals. The necessary frequencies used for this contract will be assigned by the COTR/PI when the radio is used. The contractor shall obtain the necessary FCC licenses for the radio system.

The proper operation, service and maintenance of all contractor furnished helicopters is the responsibility of the contractor. The BLM reserves the right to remove from service pilots and helicopters which, in the opinion of the Contracting Officer or COTR/PI, violate contract and FAA rules, are unsafe or otherwise unsatisfactory. In this event, the contractor will be notified in writing to furnish replacement pilots or helicopters within 48 hours of notification. All such replacements must be approved in advance of operation by the Contracting Officer or his/her representative.

All incidents/accidents occurring during the performance of any delivery order shall be immediately reported to the COTR.

5. Non-Contract Helicopter Operations

An Aircraft Safety Plan and flight hazard analysis will be appropriately approved and filed and copies distributed to the necessary individuals prior to commencing the removal operation. Daily flight plans will also be filed. If a BLM contract helicopter is used, all BLM, Aircraft Safety and Operations standards will be adhered to.

There will be daily briefings with the helicopter pilot, Authorized Officer and all personnel involved in the day's operation. The purpose of this meeting is to discuss in detail all information gathered during the familiarization flight such as hazards, location of horses, potential problems, etc. Discuss any safety hazards anticipated for the coming day's operation or any safety problems observed by the Authorized Officer or anyone else, outline the plan of action, delineate course of actions, specifically position the hazers and their responsibilities, logistics, and timing. After each flight, removal personnel will discuss any problems and suggest solutions. This may be accomplished over the radio or on the ground as the need dictates.

A flight operations plan will be filed with the Cedar City Interagency Dispatch Center. This plan will describe the area to be flown and the expected time frames of flight operations. A weather forecast will be acquired from the dispatcher. There will be no flights on days of high or gusty, erratic winds or days with poor visibility.

Two-way radio communication between the helicopter and the ground crew will be maintained at all times during the operation.

An operation or contractor's log will be maintained for all phases of the operation. The log will be as detailed as possible and will include names, dates, places and other pertinent information, as well as, observations of personnel involved.

6. Animal Handling and Care

Prior to any gathering operations, the COTR/PI will provide for a pre-capture evaluation of existing conditions in the gather areas. The evaluation will include animal condition, prevailing temperatures, drought conditions, soil conditions, road conditions, and a topographic map with location of fences, other physical barriers, and acceptable trap locations in relation to animal distribution. The evaluation will determine whether the proposed activities will necessitate the presence of a veterinarian during operations. If it is determined that capture efforts necessitate the services of a veterinarian, one would be obtained before capture would proceed.

The contractor will be apprised of the all conditions and will be given instructions regarding the capture and handling of animals to ensure their health and welfare is protected.

The Authorize Officer and pilot may take a familiarization flight identifying all natural hazards (rims, canyons, winds) and man-made hazards in the area so that helicopter flight crew, ground personnel, and wild horse safety will be maximized. Aerial hazards will be recorded on the project map.

No fence modifications will be made without authorization from the Authorized Officer. The contractor/BLM shall be responsible for restoration of any fence modification which has been made.

If the route the contractor/BLM proposes to herd animals passes through a fence, opening should be large enough to allow free and safe passage. Fence material shall be rolled up and fence posts will be removed or sufficiently marked to ensure safety of the animals. The standing fence on each side of the gap will be well flagged or covered with jute or like material.

Wings shall not be constructed out of materials injurious to animals and must be approved by the Authorized Officer.

It is the responsibility of the contractor/BLM to provide security to prevent loss, injury or death of captured animals until delivery to final destination.

Animals shall not be allowed to remain standing on trucks while not in transport for a combined period of greater than three (3) hours. Animals that are to be released back into the capture area may need to be transported back to the original trap site. This determination will be at the discretion of the COTR.

Branded or privately owned animals captured during gather operations will be handled in accordance with state estray laws and existing BLM policy.

Capture methods will be identified prior to issuance of delivery orders. Regardless of which methods are selected, all capture activities shall incorporate the following:

a. Trap Site Selection

The Authorized Officer will make a careful determination of a boundary line to serve as an outer limit within which horses will be herded to a selected trap site. The Authorized Officer will insure that the pilot is fully aware of all natural and manmade barriers which might restrict free movement of horses. Topography, distance, and current condition of the horses are factors that will be considered to set limits to minimize stress on horses.

Gather operations will be monitored and restricted (if necessary) to assure the body condition of the

horses are compatible with the distances and the terrain over which they must travel. Pregnant mares, mares with small colts, and other horses would be allowed to drop out of bands which are being gathered if required to protect the safety and health of the animals.

All trap and holding facility locations must be approved by the Authorized Officer prior to construction. The situation may require moving of the trap. All traps and holding facilities not located on public land must have prior written approval of the landowner.

Trap sites will be located to cause as little injury and stress to the animals, and as little damage to the natural resources of the area, as possible. Sites will be located on or near existing roads. Additional trap sites may be required, as determined by the Authorized Officer, to relieve stress to the animals caused by specific conditions at the time of the gather (i.e. dust, rocky terrain, temperatures, etc.).

b. Trap/Facility Requirements

All traps, wings, and holding facilities shall be constructed, maintained and operated to handle the animals in a safe and humane manner and be in accordance with the following:

Traps and holding facilities shall be constructed of portable panels, the top of which shall not be less than 72 inches high for horses and 60 inches for burros, and the bottom rail of which shall not be more than 12 inches from ground level. All traps and holding facilities shall be oval or round in design.

All loading chute sides shall be fully covered with plywood (without holes) or like material. The loading chute shall also be a minimum of 6 feet high.

All runways shall be of sufficient length and height to ensure animal and wrangler safety and may be covered with plywood, burlap, plastic snow fence or like material a minimum of 1 foot to 5 feet above ground level for burros and 1 foot to 6 feet for horses.

If a government furnished portable chute is used to restrain, age, or to provide additional care for animals, it shall be placed in the runway in a manner as instructed by or in concurrence with the Authorized Officer.

All crowding pens including the gates leading to the runways may, if necessary to prevent injuries from escape attempts, be covered with a material which prevents the animals from seeing out (plywood, burlap, snow fence etc.) and should be covered a minimum of 1 foot to 5 feet above ground level for burros and 2 feet to 6 feet for horses.

When holding facilities are used, and alternate pens are necessary to separate mares with small foals, animals which will be released, sick and injured animals, and estrays from the other animals or to facilitate sorting as to age, number, size, temperament, sex, and condition; they will be constructed to minimize injury due to fighting and trampling. In some cases, the Government will require that animals be restrained for determining an animal's age or for other purposes. In these instances, a portable restraining chute will be provided by the Government. Either segregation or temporary marking and later segregation will be at the discretion of the COTR.

If animals are held in the traps and/or holding facilities, a continuous supply of fresh clean water at a minimum rate of 10 gallons per animal per day will be supplied. Animals held for 10 hours or more in the traps or holding facilities shall be provided good quality hay at the rate of not less than two pounds of hay per 100 pounds of estimated body weight per day.

Separate water troughs shall be provided at each pen where animals are being held. Water troughs shall be constructed of such material (e.g. rubber, rubber over metal) so as to avoid injury to animals.

When dust conditions occur within or adjacent to the trap or holding facility, the contractor/BLM shall be required to wet down the ground with water.

7. Treatment of Injured or Sick; Disposition of Terminal Animals

The contractor/BLM shall restrain sick or injured animals if treatment is necessary. A veterinarian may be called to make a diagnosis and final determination. Destruction shall be done by the most humane method available. Authority for humane destruction of wild horses (or burros) is provided by the Wild Free-Roaming Horse and Burro Act of 1971, Section 3(b)(2)(A), 43 CFR 4730.1, BLM Manual 4730 - Euthanasia is in accordance with BLM policy as expressed in Instructional Memorandum No. 2006-023.

Any captured horses that are found to have the following conditions may be humanely destroyed:

a. The animal shows a hopeless prognosis for life.
b. Suffers from a chronic or incurable disease.
c. Requires continuous care for acute pain and suffering.
d. Not capable of maintaining a Henneke body condition rating of one or two.
e. Has an acute or chronic injury, physical defect or lameness that would not allow the animal to live and interact with other horses, keep up with its peers or exhibits behaviors which may be considered essential for an acceptable quality of life constantly or for the foreseeable future.
f. Suffers from an acute or chronic infectious disease where State or Federal animal health officials order the humane destruction of the animal as a disease control measure.

The Authorized Officer will determine if injured animals must be destroyed and provide for destruction of such animals. The contractor/BLM may be required to dispose of the carcasses as directed by the Authorized Officer.

The carcasses of the animals that die or must be destroyed as a result of any infectious, contagious, or parasitic disease will be disposed of by burial to a depth of at least 3 feet.

The carcasses of the animals that must be destroyed as a result of age, injury, lameness, or non-contagious disease or illness will be disposed of by removing them from the capture site or holding corral and placing them in an inconspicuous location to minimize visual impacts. Carcasses will not be placed in a drainage regardless of drainage size or downstream destination.

8. Motorized Equipment

All motorized equipment employed in the transportation of captured animals shall be in compliance with appropriate State and Federal laws and regulations applicable to the humane transportation of animals. The contractor shall provide the Authorized Officer with a current safety inspection (less than one year old) of all tractor/stock trailers used to transport animals to final destination.

Vehicles shall be in good repair, of adequate rated capacity, and operated so as to ensure that captured animals are transported without undue risk or injury.

Only stock trailers with a covered top shall be allowed for transporting animals from trap site(s) to temporary holding facilities. Only stock trailers, or single deck trucks shall be used to haul animals from

temporary holding facilities to final destination(s). Sides or stock racks of transporting vehicles shall be a minimum height of 6 feet 6 inches from the vehicle floor. Single deck trucks with trailers 40 feet or longer shall have two (2) partition gates providing three (3) compartments within the trailer to separate animals. The compartments shall be of equal size plus or minus 10 percent. Trailers less than 40 feet shall have at least one partition gate providing two (2) compartments within the trailer to separate animals. The compartments shall be of equal size plus or minus 10 percent. Each partition shall be a minimum of 6 feet high and shall have at the minimum a 5 foot wide swinging gate. The use of double deck trailers is unacceptable and will not be allowed.

Vehicles used to transport animals to the final destination(s) shall be equipped with at least one (1) door at the rear end of the vehicle, which is capable of sliding either horizontally of vertically. The rear door must be capable of opening the full width of the trailer. All panels facing the inside of all trailers must be free of sharp edges or holes that could cause injury to the animals. The material facing the inside of the trailer must be strong enough, so that the animals cannot push their hooves through the sides. Final approval of vehicles to transport animals shall be held by the Authorized Officer.

Floors of vehicles, trailers, and the loading chute shall be covered and maintained with materials sufficient to prevent the animals from slipping.

Animals to be loaded and transported in any vehicle or trailer shall be as directed by the Authorized Officer and may include limitations on numbers according to age, size, sex, temperament, and animal condition. The minimum square footage per animal is as follows:

11 square feet/adult horse (1.4 linear foot in an 8 foot wide trailer)
06 square feet/horse foal (0.75 linear foot in an 8 foot trailer)

The Authorized Officer shall consider the condition of the animals, weather conditions, type of vehicles, distance to be transported, or other factors when planning for the movement of captured animals. The Authorized Officer shall provide for any brand and/or inspection services required for the captured animals.

Communication lines will be established with personnel involved in off-loading the animals to receive feedback on how the animals arrive (condition/injury etc.). Should problems arise, gathering methods, shipping methods and/or separation of the animals will be changed in an attempt to alleviate the problems.

If the Authorized Officer determines that dust conditions are such that animals could be endangered during transportation, the contractor/BLM will be instructed to adjust speed and/or use alternate routes.

Periodic checks by the Authorized Officer will be made as animals are transported along dirt roads. If speed restrictions are in effect the Authorized Officer will at times follow and/or time trips to ensure compliance.

9. Special Stipulations.

Private landowners or the proper administering agency(s) would be contacted and authorization obtained prior to setting up traps on any lands which are not administered by BLM. Wherever possible, traps would be constructed in such a manner as to not block vehicular access on existing roads.

If possible, traps would be constructed so that no riparian vegetation is contained within them. Impacts to riparian vegetation and/or running water is located within a trap (and available to horses) would be

mitigated by removing horses from the trap immediately upon capture. No vehicles would be operated on riparian vegetation or on saturated soils associated with riparian/wetland areas.

Whenever possible, gathering would be conducted when soils are dry or frozen and conditions are optimal for safety and protection of the horses and wranglers. Also, whenever possible, scheduling of gathers would be done to minimize impacts with big game hunting seasons.

Gathers would not be conducted 6 weeks on either side of peak foaling season, which for this gather is April 15th, to reduce the chance of injury or stress to pregnant mares or mares with young foals.

The helicopter would avoid eagles and other raptors, and would not be flown repeatedly over any identified active raptor nests. No unnecessary flying would occur over big game on their winter ranges or active fawning/calving grounds during the period of use.

Standard operating procedures in the setting-up and construction of traps will avoid adverse impacts to wildlife species, including threatened, endangered, or sensitive species.

Weed free hay will be used for bait trapping, and feeding purposes of wild horses and/or domestic horses at trap sites. Hay feed at Temporary Holding Facilities placed on federal lands will be certified weed free hay or approved by the authorized officer on site.

10. Herd Health and Viability Data Collection

The following information will be collected from each animal captured: age, sex, color, overall health, pregnancy or nursing status.

In addition, blood or hair samples may be collected from individuals within the herd. Certain other activities including immunocontraceptive research, radio collaring, respiratory disease, and freeze marking may be conducted.

a. Population Management Plan/Selective Addition or Removal

Blood samples may be taken for the purposes of furthering genetic ancestry studies and incorporation into the Population Management Plans which will be developed for each HMA/complex.

On occasion, it may be necessary to enhance and maintain genetic diversity a few animals with compatible characteristics may be introduced from other HMAs. Introduced animals will be taken from areas with similar habitat.

b. Immunocontraceptive Research

When the immunocontraceptive vaccine is used, delivery of the vaccine will be conducted by trained individuals, using approved delivery methods. The vaccine will be administered to the large muscle on the hip and/or as the approved delivery methods directs.

c. Respiratory Disease Research

Serum and nasal samples may be taken from all saddle horses and Judas horses within 48 hours before or after the first day of each gather. Swabs would be used to collect samples of nasal discharge or of the material drainage from the abscess from clinically ill wild horses during routine restraint. Data gathered

from this research would be used in future management of wild horse during gathering and holding.

11. Public Participation

Prior to conducting a gather a communications plan or similar document summarizing the procedures to follow when media or interested public request information or viewing opportunities during the gather should be prepared.

The public must adhere to guidance from the agency representative and viewing must be prearranged.

12. Safety

Safety of BLM employees, contractors, members of the public, and the wild horses will be given primary consideration. The following safety measures will be used by the Authorized Officer and all others involved in the operation as the basis for evaluating safety performance and for safety discussions during the daily briefings:

A briefing between all parties involved in the gather will be conducted each morning.

All BLM personnel, contractors and volunteers will wear protective clothing suitable for work of this nature. BLM will alert observers of the requirement to dress properly (see Wild Horse and Burro Operational Hazards, BLM File 4720, UT-067). BLM will assure that members of the public are in safe observation areas.

The handling of hazardous, or potentially hazardous materials such as liquid nitrogen and vaccination needles will be accomplished in a safe and conscientious manner by BLM personnel or the contract veterinarian.

13. Responsibility and Lines of Communication

The local WH&B Specialist / Project Manager from the CCFO, have the direct responsibility to ensure the contractor's compliance with the contract stipulations.

Gather Research Coordinator (GRC) from the CCFO, will have the direct responsibility to ensure compliance with all data collection and sampling. The GRC will also ensure appropriate communication with Field Office Manager, WO260 National Research Coordinator, College of Veterinary Medicine at Texas A&M University, and Animal Plant Health Inspection Service (APHIS).

The CCFO Assistant Manager will take an active role to ensure the appropriate lines of communication are established between the field, Field Office, State Office, Salt Lake Regional Wild Horse Corrals and Delta Wild Horse Corrals.

All employees involved in the gathering operations will keep the best interests of the animals at the forefront at all times.

14. Glossary

Appropriate Management Level - The number of wild horses and burro which can be sustained within a designated herd management area which achieves and maintains a thriving natural ecological balance keeping with the multiple-use management concept for the area.

Authorized Officer - An employee of the BLM to whom has been delegated the authority to perform the duties described in these Standard Operating Procedures. See BLM Manual 1203 for explanation of delegation of authority.

Census - The primary monitoring technique used to maintain a current inventory of wild horses and burros on given areas of the public lands. Census data are derived through direct visual counts of animals using a helicopter.

Contracting Officer (CO) - Is the individual responsible for an awarded contract, deals with claims, disputes, negotiations, modifications, payments and appoints COTRs and PIs.

Contacting Officers Technical Representative (COTR) - Acts as the technical representative for the CO on a contract. Ensures that all specifications and stipulations are met. Reviews the contractor's progress, advises the CO on progress, problems, costs, etc. Is responsible for review, approval, and acceptance of services.

Evaluation - A determination based on studies and other data that are available as to if habitat and population objectives are or are not being met and where an overpopulation of wild horses and burros exists and whether actions should be taken to remove excess animals.

Excess Wild Horses or Burros - Wild free-roaming horses or burros which have been removed from public lands or which must be removed to preserve and maintain a thriving ecological balance and multiple-use relationship.

Gather Research Coordinator (GRC)- A BLM employee that is designated by the Field Office Manager prior to each gather, who identifies potential problem areas in research data collection, determines need for additional field assistance to meet sampling requirements, ensures compliance with all data sampling, and communicants and coordinates all data gather during a gather with the Field Office Manager, WO260 National Research Coordinator, Colorado State University Center of Veterinary Epidemiology and Animal Disease and Surveillance Systems (CSU-CVEADSS), and Animal Plant Health Inspection Service (APHIS).

Genetically Viable - Fitness of a population as represented by its ability to maintain the long-term reproductive capacity of healthy, genetically diverse members.

Health Assessment - Evaluation process based on best available studies data to determine the current condition of resources in relation to potential or desired conditions.

Healthy Resources - Resources that meet potential or desired conditions or are improving toward meeting those potential or desired conditions.

Herd Area - The geographical area identified as having been used by wild horse and burro populations in 1971, at the time of passage of the Wild Free-roaming Horse and Burro Act.

Herd Management Area - The geographical area as identified through the land use planning process established for the long-term management of wild horse and burro populations. The boundaries of the herd management area may not be greater than the area identified as having been used by wild horse and burro populations in 1971, at the time of passage of the Wild Free-roaming Horse and Burro Act.

Invasive Weeds - Introduced or noxious vegetative species which negatively impact the ecological

balance of a geographical area and limit the areas potential to be utilized by authorized uses.

Metapopulation (complex) - A population of wild horses and burros comprised of two or more smaller, interrelated populations that are linked by movement or distribution within a defined geographical area.

Monitoring - Inventory of habitat and population data for wild horses and burros and associated resources and other authorized rangeland uses. The purpose of such inventories is to be used during evaluations to make determinations as to if habitat and population objectives are or are not being met and where an overpopulation of wild horses and burros exists and whether actions should be taken to remove excess animals.

Multiple Use Management - A combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals watershed, domestic livestock, wild horses, wild burros, wildlife, and fish, along with natural, scenic, scientific, and historical values.

Project Inspector - Coordinates with the COTR assigned to a contract to support his/her responsibility for review, approval, and acceptance of services.

Research - Science based inquiry, investigation or experimentation aimed at increasing knowledge about wild horses and burros conducted by accredited universities or federal government research organizations with the active participation of BLM wild horse and burro professionals.

Science Based Decision Making - Issuance of decisions affecting wild horses and burros, associated resources and other authorized rangeland uses incorporating best available habitat and population data and in consultation with the public.

Studies - Science based investigation of specific aspects of wild horse and burro habitat or populations in supplement to established monitoring. These investigations would not be established following rigid experimental protocols and could include drawing blood on animals to study genetics, disease and general health issues and population dynamics such as reproduction and mortality rates and general behavior.

Thriving Natural Ecological Balance - An ecological balance requires that
wild horses and burros and other associated animals be in good health and reproducing at a rate that sustains the population, the key vegetative species are able to maintain their composition, production and reproduction, the soil resources are being protected, maintained or improved, and a sufficient amount of good quality water is available to the animals.

Appendix 6.
Standard BLM Operating Procedures for Fertility Control Treatment

The following management and monitoring requirements are part of the proposed action:

The 22 month pelleted Porcine zona pellucida (PZP) vaccine would be administered by trained BLM personnel.

The fertility control drug would be administered with two separate injections: (1) a liquid dose of PZP is administered using an 18 gauge needle primarily by hand injection; (2) the pellets are preloaded into a 14 gauge needle. These are loaded on the end of a trocar (dry syringe with a metal rod) which is loaded into the jabstick which then pushes the pellets into the breeding mares being returned to the range. The pellets and liquid are designed to release the PZP over time similar to a time release cold capsule.

Delivery of the vaccine would be as an intramuscular injection while the mares are restrained in a working chute. 0.5 cubic centimeters (cc) of the PZP vaccine would be emulsified with 0.5 cc of adjuvant (a compound that stimulates antibody production) and loaded into the delivery system. The pellets would be loaded into the jabstick for the second injection. With each injection, the liquid and pellets would be propelled into the left hind quarters of the mare, just below the imaginary line that connects the point of the hip and the point of the buttocks.

All treated mares would be freeze-marked with two 3.5-inch letters on the left hip for treatment tracking purposes. The only exception to this requirement is that each treated mare can be clearly and specifically identified through photographs or markings. This step is to enable researchers to positively identify the animals during the research project as part of the data collection phase.

At a minimum, estimation of population growth rates using helicopter or fixed wing surveys would be conducted the year preceding any subsequent gather. During these surveys it would not be necessary to identify which foals were born to which mares, only an estimate of population growth is needed (i.e. # of foals to # of mares).

Population growth rates of herds selected for intensive monitoring would be estimated every year post-treatment using helicopter or fixed wing surveys. During these surveys it would not be necessary to identify which foals were born to which mares, only an estimate of population growth is needed (i.e. # of foals to # of mares). During routine HMA field monitoring (on-the-ground), if data on mare to foal ratios can be collected, these data should also be shared with the NPO for possible analysis by the USGS.

A PZP Application Data sheet would be used by the field applicators to record all the pertinent data relating to identification of the mare (including a photograph if the mares are not freeze-marked) and date of treatment. Each applicator would submit a PZP Application Report and accompanying narrative and data sheets would be forwarded to the NPO (Reno, Nevada). A copy of the form and data sheets and any photos taken would be maintained at the field office.

A tracking system will be maintained by NPO detailing the quantity of PZP issued, the quantity used, disposition of any unused PZP, the number of treated mares by HMA, field office, and state along with the freeze-mark applied by HMA.

Appendix 7
Standard Operating Procedures
for Field Castration (Gelding) of Wild Horse Stallions

June 2011

Gelding will be performed with general anesthesia and by a veterinarian. The combination of pharmaceutical compounds used for anesthesia, method of physical restraint, and the specific surgical technique used will be at the discretion of the attending veterinarian with the approval of the authorized officer (I.M. 2009-063).

Pre-surgery Animal Selection, Handling and Care

1. Stallions selected for gelding will be greater than 6 months of age and less than 20 years of age.
2. All stallions selected for gelding will have a Henneke body condition score of 3 or greater. No animals which appear distressed, injured or in failing health or condition will be selected for gelding.
3. Stallions will not be gelded within 36 hours of capture and no animals that were roped during capture will be gelded at the temporary holding corrals for rerelease.
4. Whenever possible, a separate holding corral system will be constructed on site to accommodate the stallions that will be gelded. These gelding pens will include a minimum of 3 pens to serve as a working pen, recovery pen(s), and holding pen(s). An alley and squeeze chute built to the same specifications as the alley and squeeze chutes used in temporary holding corrals (solid sides in alley, minimum 30 feet in length, squeeze chute with non-slip floor) will be connected to the gelding pens.
5. When possible, stallions selected for gelding will be separated from the general population in the temporary holding corral into the gelding pens, prior to castration.
6. When it is not possible or practical to build a separate set of pens for gelding, the gelding operation will only proceed when adequate space is available to allow segregation of gelded animals from the general population of stallions following surgery. At no time will recently anesthetized animals be returned to the general population in a holding corral before they are fully recovered from anesthesia.
7. All animals in holding pens will have free access to water at all times. Water troughs will be removed from working and recovery pens prior to use.
8. Prior to surgery, animals in holding pens may be held off feed for a period of time (typically 12-24 hours) at the recommendation and direction of the attending veterinarian.
9. The final determination of which specific animals will be gelded will be based on the professional opinion of the attending veterinarian in consultation with the Authorized Officer.
10. Whether the procedure will proceed on a given day will be based on the discretion of the attending veterinarian in consultation with the Authorized Officer taking into consideration the prevailing weather, temperature, ground conditions and pen set up. If these field situations can't be remedied, the procedure will be delayed until they can be, the stallions will be transferred to a prep facility, gelded, and later returned, or they will be released to back to the range as intact stallions.

Gelding Procedure

1. All gelding operations will be performed under a general anesthetic administered by a qualified and experienced veterinarian. Stallions will be restrained in a portable squeeze chute to allow the veterinarian to administer the anesthesia.
2. The anesthetics used will be based on a xylazine/ketamine combination protocol. Drug dosages and combinations of additional drugs will be at the discretion of the attending veterinarian.
3. Animals may be held in the squeeze chute until the anesthetic takes effect or may be released into the working pen to allow the anesthesia to take effect. If recumbency and adequate anesthesia is not achieved following the initial dose of anesthetics, the animal will either be redosed or the surgery will not be performed on that animal at the discretion of the attending veterinarian.
4. Once recumbent, rope restraints or hobbles will be applied for the safety of the animal, the handlers and the veterinarian.
5. The specific surgical technique used will be at the discretion of the attending veterinarian.
6. Flunixin meglamine or an alternative analgesic medication will be administered prior to recovery from anesthesia at the professional discretion of the attending veterinarian.
7. Tetanus prophylaxis will be administered at the time of surgery.

8. Other medications may also be administered at the time of surgery at the professional discretion of the attending veterinarian.
9. All geldings will be allowed to recover from anesthesia within the working pen or the adjacent recovery pen. Once, fully recovered each gelding will be transferred to the gelding holding pen(s). Animals will remain segregated from intact stallions for at least 24 hours following surgery or until their release.
10. Any stallions determined or believed to be a cryptorchid will be allowed to recover from the anesthesia, marked for later recognition, and shipped to a BLM prep facility for appropriate surgery or euthanasia if it is determined that they cannot be fully castrated. At no time will a partial castration be performed. Because cryptorchidism is an inherited condition, cryptorchid stallions should never be released back into an HMA.
11. Gelded animals will be freeze marked on their left hip with an identifying mark to minimize the potential for future recapture and to facilitate post-treatment monitoring. Each State will establish its own marking system in compliance with their State Brand Board. For example, Nevada BLM will utilize the identifying freeze mark on the hip (to be determined) as well as a 2 inch "F" freeze mark on the left side of the neck per agreement with the NV Brand Board.

Post-operative handling, care and monitoring

1. All animals that have fully recovered from anesthesia will have free access to water and hay prior to subsequent release.
2. All geldings will be held at least overnight for observation. Animals will not be left unattended for at least 3 hours following the procedure.
3. The attending veterinarian will observe all animals 12-24 hours after the procedure or again prior to release. Geldings will be released no later than 48 hours following surgery near a water source in their home range when possible.
4. Any gelding observed have complications will be held at the gather site until his condition improves or be shipped to a holding facility until he is able to be returned to the range.
5. Gelded animals would be monitored periodically for complications for approximately 7-10 days post-surgery. This monitoring will be completed either through aerial recon if available or field observations from major roads and trails. It is not anticipated that all the geldings will be observed but the goal is to detect complications if they are occurring and determine if the horses are freely moving about the HMA.
6. Animals found on the range with serious gelding complications will either be recaptured for treatment, if possible or euthanized as an act of mercy if necessary.
7. Observations of the long term outcomes of gelding will be recorded during routine resource monitoring work. Such observations will include but may not limited to band size, social interactions with other geldings and harem bands, distribution within their habitat, forage utilization and activities around key water sources.

Appendix 8

Population Model

Swasey 2012 Population Modeling

To complete the population model for the Swasey Herd Management Area, version 1.40 of the WinEquus program, created April 2, 2002, was utilized

Objectives of Population Modeling

Review of the Data output for each of the simulations provided many useful comparisons of the possible outcomes for each alternative. Some of the questions that need to be answered through the modeling include:

- Do any of the Alternatives "crash" the population?
- What effects does fertility control have on population growth rate?
- What effects do the different alternatives have on the average population size?
- What effects do the different alternatives have on the genetic health of the herd?

Population Data, Criteria, and Parameters utilized for Population Modeling

All simulations used the survival probabilities, foaling rates, sex ratio at birth that was supplied with the WinEquus population for the Garfield HMA.

Sex ratio at Birth:

- 50% Females
- 50%Males

The following percent effectiveness of fertility control was utilized in the population modeling for Alternative 2:

Year 1: 94% Year 2: 82% Year 3: 68%

Population Modeling Criteria

The following summarizes the population modeling criteria that aere common to the Proposed Action and all alternatives:

- Starting Year: 2012
- Initial Gather Year: 2012
- Gather Interval: regular interval of three years
- Gather for fertility treatment regardless of population size: No
- Continue to gather after reduction to treat females: Yes
- Sex ratio at birth: 58% males
- Percent of the population that can be gathered: 80%
- Minimum age for long term holding facility horses : Not Applicable
- Foals are included in AML
- Simulations were run for 10 years with 100 trials each

The following table displays the contraception parameters utilized in eh population model for Alternatives 2-3:

Contraception Criteria

Age	Percentages for Fertility Treatment
0	0%
1	0%
2	100%
3	100%
4	100%
5	100%
6	100%
7	100%
8	100%
9	100%
10-14	100%
15-19	100%
20+	0%

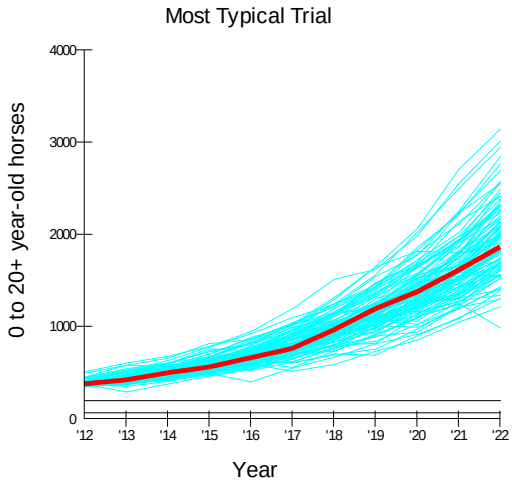
The following table displays the population modeling parameters utilized in the model:

Population Modeling Parameters	Alternative 1: No Action – Continue Existing Management. No Gather and Removal	Alternative 2: Proposed Action – Gather and Removal with Fertility Control	Alternative 3: gather and Removal with no Fertility Control
Management by removal, 60:40 adjustment in sex ratio, and fertility control	No	Yes	No
Management by removal only	No	No	Yes
Threshold Population Size folowing gathers	N/A	60	60
Target Population Size following gather	N/A	40	40
Gather for fertility regardless of population size	N/A	No	No
Gather continue after removals to treat additional females	N/A	Yes	No
Effectiveness of Fertility Control: Year 1	N/A	94%	N/A
Effectiveness of Fertility Control: Year 2	N/A	82%	N/A
Effectiveness of Fertiltiy Control: Year 3	N/A	68%	N/A

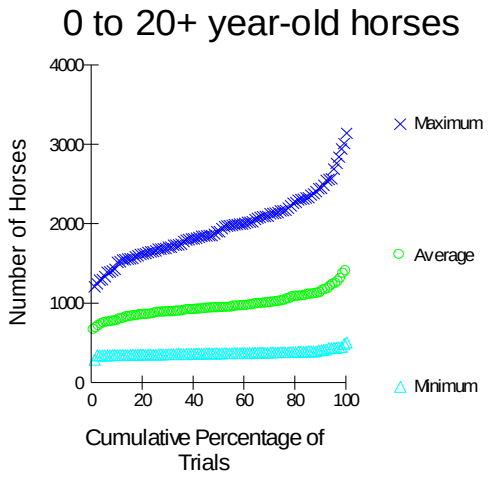
Results Alternative1: No Action – Continue Existing Management. No Gather and Removal

Results – No Action

Population Size



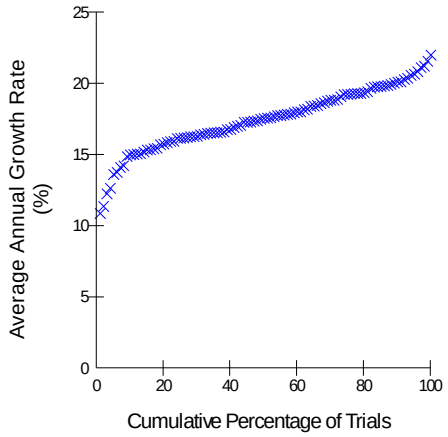
Population Sizes in 11 Years*



Population sizes in 11 Years*			
	Minimum	Average	Maximum
Lowest Trial	297	666	1218
10th Percentile	356	786	1530
25th Percentile	364	876	1682
Median Trial	378	940	1931
75th Percentile	392	1030	2179
90th Percentile	422	1145	2475
Highest Trial	513	1405	3150

*0 to 20+ year old horses

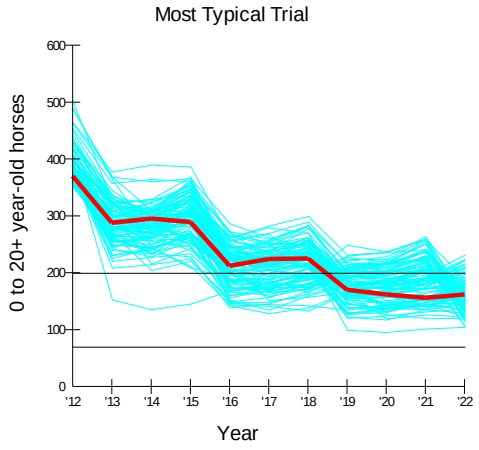
In 11 years and 100 trials, the lowest number of 0 to 20+ year-old horses ever obtained was 297 and the highest was 3150. In half the trials, the minimum population size in 11 years was less than 378 and the maximum was less than 1931. The average population size across 11 years ranged from 666 to 1405.

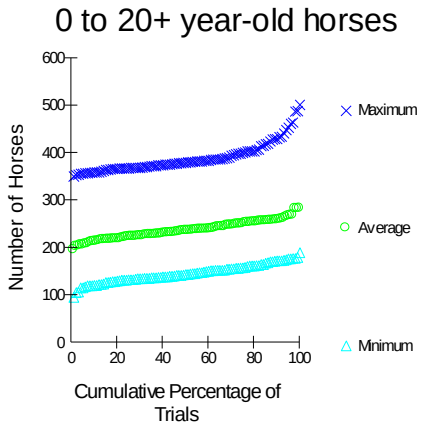


Average Growth Rate in 10 Years	
Lowest Trial	12.1%
10th Percentile	14.6%
25th Percentile	15.8%
Median Trial	17.3%
75th Percentile	18.9%
90th Percentile	19.8%
Highest Trial	21.6%

Results Alternative 2: Proposed Action. Gather and Removal with Fertility Control

Population Size

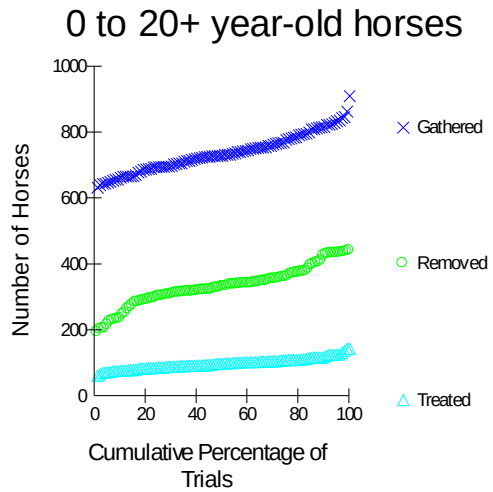




	Population sizes in 11 Years*		
	Minimum	Average	Maximum
Lowest Trial	96	196	351
10th Percentile	121	214	360
25th Percentile	133	224	368
Median Trial	144	236	380
75th Percentile	158	252	402
90th Percentile	173	259	432
Highest Trial	190	283	502

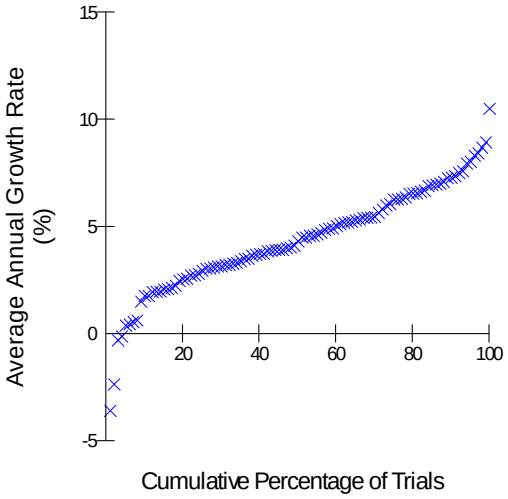
*0 to 20+ year old horses

In 11 years and 100 trials, the lowest number of 0 to 20+ year-old horses ever obtained was 96 and the highest was 502. In half the trials, the minimum population size in 11 years was less than 144 and the maximum was less than 380. The average population size across 11 years ranged from 196 to 283.



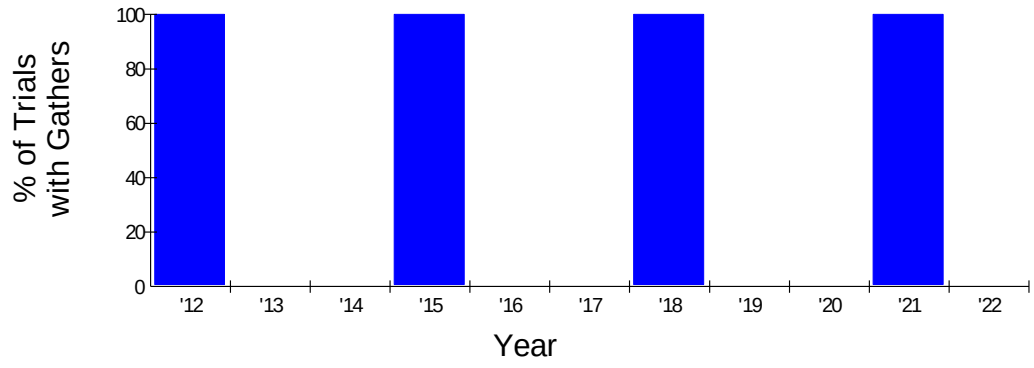
	Totals in 11 Years*		
	Gathered	Removed	Treated
Lowest Trial	634	194	63
10th Percentile	666	242	78
25th Percentile	697	303	88
Median Trial	732	333	100
75th Percentile	780	362	110
90th Percentile	822	428	121
Highest Trial	912	442	145

*0 to 20+ year old horses



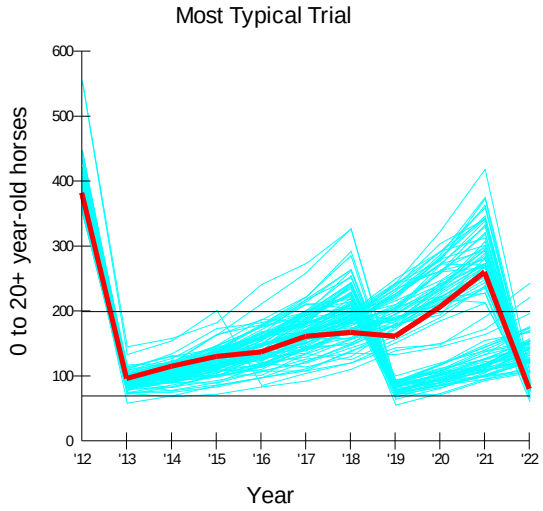
Average Growth Rate in 10 Years

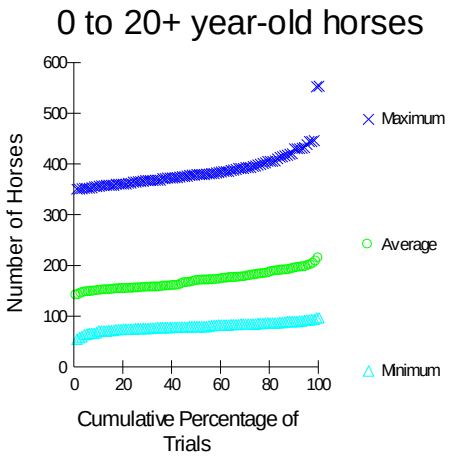
Lowest Trial	-3.6%
10th Percentile	1.8%
25th Percentile	3.0%
Median Trial	4.4%
75th Percentile	6.3%
90th Percentile	7.4%
Highest Trial	10.5%



Results Alternative 3: Gather and Removal without Fertility Control

Population Size





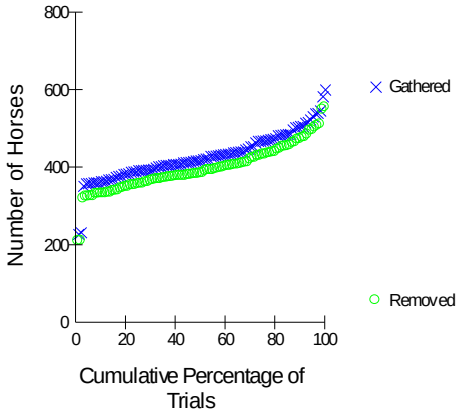
Population sizes in 11 Years*			
	Minimum	Average	Maximum
Lowest Trial	56	141	352
10th Percentile	72	150	358
25th Percentile	77	155	366
Median Trial	81	170	381
75th Percentile	87	182	400
90th Percentile	91	194	432
Highest Trial	98	214	555

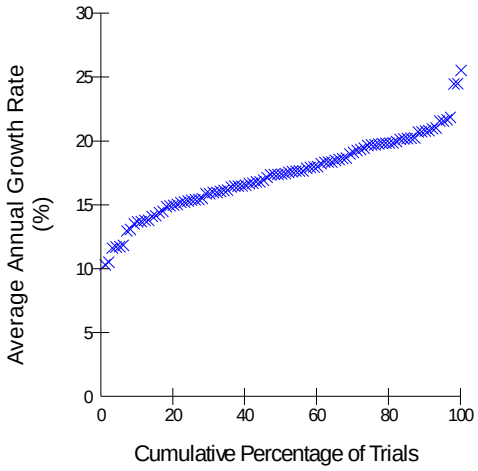
*0 to 20+ year old horses

In 11 years and 100 trials, the lowest number of 0 to 20+ year-old horses ever obtained was 56 and the highest was 555. In half the trials, the minimum population size in 11 years was less than 81 and the maximum was less than 381. The average population size across 11 years ranged from 141 to 214.

Totals in 11 Years*		
	Gathered	Removed
Lowest Trial	229	210
10th Percentile	365	333
25th Percentile	393	358
Median Trial	420	386
75th Percentile	470	433
90th Percentile	507	475
Highest Trial	601	555

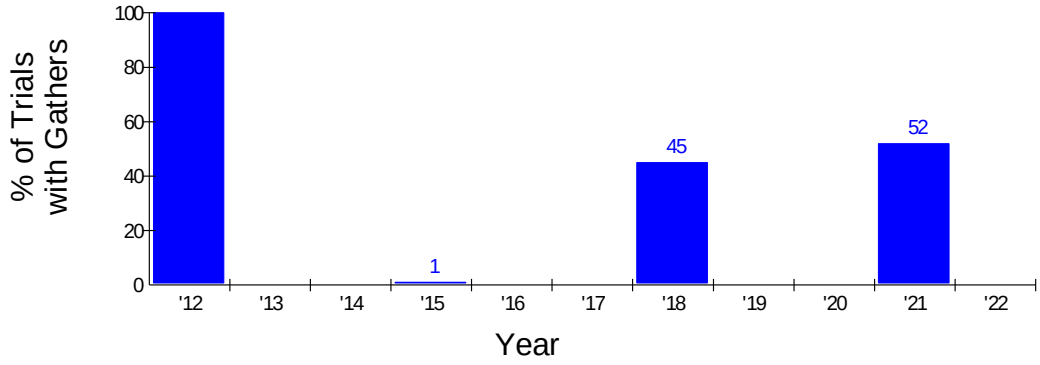
0 to 20+ year-old horses





Average Growth Rate in 10 Years

Lowest Trial	10.4%
10th Percentile	13.7%
25th Percentile	15.5%
Median Trial	17.5%
75th Percentile	19.8%
90th Percentile	20.9%
Highest Trial	25.6%



Appendix 9

Scheduled Observation Day Protocol and Ground Rules

These rules were created to ensure the safety of both the humans and the animals at the gather site(s).

A scheduled public observation day provides a more structured mechanism for interested members of the public to see the wild horse gather activities at a given site. The BLM attempts to allow the public to get an overall sense of the gather process and has available staff who can answer questions that the public may have. The public rendezvous at a designated place and are escorted by BLM representatives to and from the gather site.

- The Bureau of Land Management (BLM) will schedule observation days to provide the media and public opportunities to view activities during the wild horse gather.
- To provide a safe environment for the animals, BLM staff, contractors and members of the public/media, requests will be accepted on a first come, first served basis and be limited to **10 people** per observation day. The BLM recommends all appointments be made as far in advance as possible in order to help us schedule and confirm your request, and will make every reasonable effort to accommodate the public.
- Observation days and gather operations may be suspended if bad weather conditions create unsafe flying conditions.
- The BLM will notify observers as soon as possible if an observation day is canceled due to bad weather.
- Observers must provide their own 4-wheel drive high clearance vehicle, appropriate shoes, clothing and food.
- Observers are prohibited from riding in government and contractor vehicles and equipment.
- Visitors arriving at the rendezvous site without an appointment will not be allowed to participate in the observation day.
- BLM representatives will escort visitors to and from the gather and/or temporary holding facility.
- Visitors will be assigned to a BLM representative and must stay with that person at all times.
- Visitors are **NOT** permitted to walk around the gather site unaccompanied by a BLM representative.
- The BLM will clearly identify observation areas and visitors **must** stay within these designated areas.
- Observers are prohibited from climbing/trespassing onto or in the trucks, equipment or corrals, which is the private property of the contractor.
- Visitors must direct their questions/comments to either a designated BLM representative or the BLM spokesperson on site, and not engage other BLM/contractor staff and disrupt their gather duties/responsibilities.
- BLM may make the BLM/contractor staff available during down times for a Q&A session.
- When given the signal that the helicopter is close to the gather site bringing horses in, visitors must sit down in areas specified by BLM representatives and must not move or talk as the horses are guided into the corral.

Observers will be polite, professional and respectful to BLM managers and staff and the contractor/employees.

Visitors who do not cooperate and follow the rules will be escorted off the gather site by BLM law enforcement personnel, and will be prohibited in participating in any subsequent observation days.

Non- Scheduled Observation day Protocol and Ground Rules

Non-scheduled observation days are days when the public is welcome to attend a gather on public land, or

on specified private lands where permission was granted. The public is responsible for their own safety and health in their travels to and from the gather site.

- BLM staff may be limited on these days to answer questions.
- Visitors must direct their questions/comments to either a designated BLM representative or the BLM spokesperson on site, and not engage other BLM/contractor staff and disrupt their gather duties/responsibilities.
- The public will be expected to remain in designated observation areas.
- Visitors are **NOT** permitted to walk around the gather site unaccompanied by a BLM representative.
- The BLM will clearly identify observation areas and visitors **must** stay within these designated areas.
- Observers are prohibited from climbing/trespassing onto or in the trucks, equipment or corrals, which is the private property of the contractor.
- Observers must provide their own 4-wheel drive high clearance vehicle, appropriate shoes, clothing and food.
- When given the signal that the helicopter is close to the gather site bringing horses in, visitors must sit down in areas specified by BLM representatives and must not move or talk as the horses are guided into the corral.
- Gather operations may be suspended if bad weather conditions create unsafe flying conditions. Notification of suspension of gather operations will be made to the public that is present as soon as possible.
- Visitors must direct their questions/comments to either a designated BLM representative or the BLM spokesperson on site, and not engage other BLM/contractor staff and disrupt their gather duties/responsibilities.
- BLM may make the BLM/contractor staff available during down times for a Q&A session.

Observers will be polite, professional and respectful to BLM managers and staff and the contractor/employees.

Visitors who do not cooperate and follow the rules will be escorted off the gather site by BLM law enforcement personnel, and will be prohibited in participating in any subsequent observation days.

Appendix 10
Summary of Comments Received During Public Scoping